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RECONSTRUCTIVE SURGERY IN WAR TIME *

F. C. KIDNER, M.D. (DETROIT)
Captain, M. R. C., U. S. Army

ENGLAND

The energy and enthusiasm of Sir Robert Jones are responsible for the establishment in the British Isles of fifteen or twenty large, well equipped orthopedic hospitals for wounded soldiers. Over these, Sir Robert exercises a general supervision, and in them he instructs the various members of the staffs in the details of reconstructive work among the wounded. During the past nine months, it has been my good fortune to be stationed in charge of a service at one of the largest of these centers, that at Shepherd's Bush, London. During that time, I have had an opportunity of seeing and of treating large numbers of patients who, in private life, would be considered permanent cripples, but here, through the stimulating teaching and with the wise help of Sir Robert Jones, are being returned to usefulness.

The Shepherd's Bush Hospital has 1,100 beds, and is fully equipped with departments for after-treatment, massage and electricity, a gymnasium, and curative and productive workshops. It is in charge of a group of able men all specially trained in orthopedic surgery, or in one of the supplementary specialties. In my own service, I have had the opportunity to apply the various methods which the necessities of war surgery have added to those of civil life. In the light of this experience, I feel justified in attempting to sketch some of the problems that arise from war damage to bones, joints, muscles, connective tissues and nerves, and some of the methods of treatment that have been found to be of value.

SEPSIS

Fundamentally, both the problems and the methods of treatment are the same as those of orthopedic surgery in civil life. In detail, the two are radically different. This is due to several factors, first of which stands sepsis. Nowhere in private life do we meet such persistent and severe sepsis as constantly occurs among the wounded. Second in importance comes scar tissue. The great destruction of soft parts, and the active sepsis of wounds, combine to create enormous masses of dense, extremely tough, fibrous tissue. Third, the crippling incident to wounds is often so widespread and so severe that very difficult problems of judgment arise in laying out a plan for the restoration to usefulness of the patient. For example, it is far more important to preserve even badly crippled fingers on the left hand when the right hand has been wholly lost, than it is when the right hand is still useful. In this connection, let me say that our experience leads us to believe that a very poor natural leg and foot is better than an artificial one, and that any natural hand and arm, no matter how bad, is better than an artificial one. Fourth, the great length of time required to get results puts a heavy tax on the cardinal virtue of patience in the surgeon, and on the mental and moral fiber of the war weary soldier.

The greatest number of our cases are those that involve bone injury, and these come to us in two classes, the recent and the old. Of the former there are few, of the latter there are very many. The recent fractures reach us after the primary operation for drainage has been done, and the adjustment of the fragments effected. All of these are actively and violently septic, and the greatest difficulty in their treatment lies in proper fixation and alignment, with satisfactory drainage. This is, however, perfectly possible, and can always be accomplished, except in the rare case in which amputation is necessary. Indeed, fixation in perfect alignment is the most important feature in the treatment of sepsis in compound fractures. Never is it necessary to let the fracture take care of itself while the sepsis is treated. After fixation, thorough and complete drainage and counterdrainage are the most important measures. Carrell's technic is useful, but not infallible. It undoubtedly hastens the cleaning up of wounds when drainage is satisfactory. In our hands it will not overcome sepsis without efficient drainage. It seems probable that the important factor in irrigation technic is the prevention of blocking of wounds by drying of the discharge. No matter what technic is adopted, or what solution used, the prevention of drying, careful attention and thorough drainage and counterdrainage are the cardinal principles.

During the active stages of sepsis of bone injury, the most satisfactory fixation of the parts can be obtained by the use of various simple splints. The most important of these is the Thomas knee splint, which, in different sizes, is easily adaptable to the leg or the arm. It can be bent to any desired shape, and provides excellent extension. It is easy to attach to it cross supporting bands of cloth, which can be removed one at a time without disturbing the position of the fracture, and allow easy access to the wound. When its ring is properly fitted, efficient counter-extension is obtained against the tuberosity of the ischium, or against the ribs. When properly applied, it provides perfect fixation and allows almost any degree of traction. It can be adapted by simple

* From the Military Orthopedic Hospital, Shepherd's Bush, London, England.

changes in shape or position to any fracture below the neck of the femur in the leg, or to any fracture in the arm. For example, a fracture of the lower third of the femur can invariably be brought into alignment by bending the splint at the knee to from 20 to 40 degrees. When of the upper third, it may be adjusted by abducting the whole splint. If very strong traction is necessary in reduction of the deformity of the femur, this can be obtained by tying the lower end of the splint to the foot of the bed, and raising the foot of the bed from 12 to 18 inches, thus adding the extension force of gravity through the pull of the body weight. This splint is typical of the simplicity of apparatus that has proved so useful in the common septic compound fracture.

The many forms of weight and pulley support and extension are useful in certain rare cases, but as a rule they are more cumbersome and difficult to manage than are the simple splints.

Under the treatment outlined above, it has been found that sepsis clears up rapidly, and that union in good position is invariably obtained.

BADLY UNITED OR UNUNITED FRACTURES

The second great class of bone injuries which reaches us are badly united or ununited fractures of months' or even years' standing. Most of these still have discharging sinuses, due to necrotic bone and metal fragments. Some of them never were properly reduced. Others were originally well reduced, but through the exigencies of the hospital service, in passing from surgeon to surgeon and from hospital to hospital, have gradually assumed distressing deformities. Sequestrums, sepsis, scar tissue, loss of joint function, all complicate their treatment.

Sequestrums appear in almost every case, as a result of infection. These as a general rule should be left alone until every sign of active sepsis has disappeared, and they are thoroughly separated from surrounding living bone. Removal of sequestrums must be done with most careful aseptic technic, and with an absolute minimum of trauma. A large incision of the soft parts is to be preferred, because in spite of the fact that it opens more new channels to superficial infection, it gives a view of the field of operation, which allows a minimum of bone damage. Uninfected and living bone must not be cut or scraped if it is possible to avoid it. After the removal of all dead bone, thorough drying and cleaning of the whole wound is necessary. A good technic is as follows: The dead bone is removed as gently as possible, all hemorrhage is stopped, the whole wound is dried with gauze, and alcohol is rubbed gently into all corners. This is followed with a little bismuth iodoform paste rubbed with gauze gently over all raw surfaces, and the excess removed. Sequestrectomy wounds that have been so treated may be closed tight and will break down less frequently than those in which the same technic is used without bismuth iodoform paste. Chronic wounds that have been "bipped," if they do break down, close again more rapidly.

In treating the joint that stiffens during the treatment of fractures, we have the same problems that we see in civil life. They are made worse, however, by the fact that attempts to mobilize stiff joints in these war cases frequently cause a flaring up of the original sepsis, even though it was a considerable distance from the joint. This is due to the pull exerted through muscle and fascia and the scar tissue, and has taught us that it is rarely safe to use force on such joints. Attempts at mobilization must always be gradual, and limited by pain or any sign of active inflammation. Therefore, it is best to depend on massage and exercises rather than on forcible manipulation. It is a comparatively simple matter in early fractures to prevent stiffness of adjacent joints by frequent and prompt passive motions. These can safely be begun as soon as the fracture has solidified sufficiently to prevent shortening. If the extension is removed for a few minutes each day, it can be carried out without removal of the splint.

Badly united fractures are of all degrees of deformity. Their treatment can best be considered under two heads, early and late. The early cases are those in which union has occurred but calcification is not firm from four to twelve weeks after the receipt of the injury. In this period it is almost invariably possible, by correct application of splintage and extension, markedly to decrease or even overcome the deformity. That is, although the union is apparently firm, it is really still plastic, and steady application of corrective force will mold it. This method should always be tried. When sepsis is not active in this early period, it is often safe and wise to manipulate under an anesthetic and restore alignment by this means, thus saving time. This forcible method, if carefully and gently done, does not stir up sepsis to any serious extent, but it is a measure that should be used with the greatest circumspection. Reduction by one of these two methods in the early stages of union is far easier and apt to be much more successful than is reduction by operative procedure in the late, thoroughly calcified stages.

The second class of firmly united deformed fractures almost invariably can be improved. The correction involves difficult and tedious operations, but is always worth while, because the disabilities that result from the mechanical disturbances of bone deformity are extremely trying. The key note of corrective operations is the thorough breaking up of the vicious union, so that the fragments can be molded gradually into normal position. If the breaking up of the union is complete, fixation in the corrected position at the time of operation is comparatively unimportant, because proper traction following operation will overcome extraordinary degrees of deformity and shortening. I have recently had a case of an oblique fracture of the lower third of the femur with posterior displacement of the lower fragment and 3½ inches shortening, which had been firmly united for a year at the time of operation. The union was with great difficulty chiseled free in the line of the old fracture, and forcible attempts were made to overcome the shortening with the aid of a Hawley table. The most that could be gained under the anesthetic with the application of great force was 1 inch. Therefore the bones were left in the bad position, the wound closed and the patient put to bed in a Thomas splint, with traction applied within the splint. Additional pull was obtained by tying the splint to the foot of the bed, which was raised 18 inches. In two weeks' time, the overlapping was completely overcome and perfect alignment and position obtained and held. The bone is now reunited in perfect position. Where the shortening is due to bowing at the site of a fracture, and not to overlapping, it can be overcome completely by simple osteotomy and forcible straightening at the time of operation. Proper traction will hold it. The

results obtained by this method of osteotomy, followed by extension and fixation in all types of vicious union, have been so good that I have yet to feel the necessity for the use of any of the forms of internal splintage, such as bone plates, bone grafts, or pins. The added complication and dangers attending their use do not seem to be compensated by any corresponding improvement in result. The application of any form of internal splint often leads to a false sense of security, which engenders a neglect of proper external splints, with the result that the deformity recurs. In many cases the amount of violence needed at the time of operation to get position good enough to justify the application of an internal splint is so great as to do great harm. Sometimes, as in the case cited above, no application of force or manipulation will bring about such an immediate reduction.

Ununited fractures are far worse than they are in civil life. They are of all degrees, from simple fibrous union to gaps 3 or 4 inches in length. Absolute immobilization in good position is the key note of their treatment. Most fractures in which there is little loss of bone fail to unite because of improper fixation. Even after many months of nonunion they will often unite without operation if absolutely fixed. Syphilis has little bearing on the question of union among the men who come to us, as it is of extremely rare occurrence, if we may trust the Wassermann test.

In cases in which there is large destruction of bone, bone transplantation is invaluable for three reasons. First, it immobilizes; second, it provides a bridge along which bone cells may grow from the fragments; third, it connects together any small fragments of living bone or periosteum that lie free in the tissues. I have yet to see a bone transplant that showed any signs of proliferation. On the other hand, I have watched many transplants with the roentgen ray, and seen new bone creep gradually along the graft from the living bone at both ends, forming bridges with the graft as a trellis, gradually thickening and piling up until the graft is incorporated in a new sheath, and itself becomes incorporated as new bone. The view that the growth all occurs from the living fragments is confirmed by the fact that occasionally the graft will have to be removed after weeks or months because of low grade sepsis. Such removal does not necessarily interfere with the bridging process from the ends of the fragments, which afterward go on to union. Defects of bone 4 or more inches long are often successfully bridged by grafts.

Joint injuries and infections are those of civil life much exaggerated, and are of all sorts, from the clean penetrating wounds to the badly infected destructive lesions. Many are merely small fractures into the joint. There are also numbers of inflamed joints due to systemic infections from tonsils, teeth or intestine. These are purely civil problems, but are interesting because of the comparative frequency, on this side of the water, of bad tonsils, teeth and sinuses. The damp climate makes their treatment more difficult. Syphilis is less common as a causative factor than it is in hospital practice at home.

Most of the gunshot wounds of the joint come to us after thorough operation at the front. This has usually consisted of wide incision, removal of dead tissue and thorough lavage. In the simple penetrating wounds the joints have often been closed tight. Those that stay closed do remarkably well, and it is easy to restore function. This is particularly true in the knees and wrists. In many of the cases, too, in which much damage has been done, and drainage was necessary, the patients recover with some motion. These facts suggest a doubt as to whether joints are really so nonresistant to infection as we have thought in civil life. Even when drained joints become permanently stiff, they are more useful than an amputated limb. Primary excision of joints at the front may be necessary to save a limb, and sometimes give good results; but so far as we have seen them, they are not so useful as those that have been freely opened and drained. This is because after early excision union does not always occur. Nothing is more difficult to handle than such a flail joint.

STIFF JOINTS

Mobilization of stiff joints, whether the result of sepsis, of fixation, of nerve injury, or injury to muscles and tendons, still presents many problems to be solved. It is a safe general rule that, if there is no true bony ankylosis, and the cartilage is not completely destroyed, some degree of motion can be obtained. If this range of motion is small, it is apt to be continuously painful because of joint strain. If this pain is great, then a permanent arthrodesis in useful position is wise. This is especially true in the knee joint. The vast majority of stiff joints, however, can be brought to a useful range of motion. In obtaining this, our greatest standby is voluntary use of the muscles by the patient in attempts to use and move the joint. Unfortunately, however, because of complete fixation, of weak muscles, or of nerve injury, many joints cannot be voluntarily used. In them certain rules must be observed.

1. The painful, sensitive joint, no matter how old the injury, should not be moved. It should be rested absolutely, and its only treatment should consist in efforts to keep up the circulation and to improve muscle tone. Electricity, light massage, heat, are all useful in this connection.

2. A painless stiff joint should be treated with a minimum of trauma.

3. Gradual progressive force applied over a long period accomplishes more than does sudden, severe manipulation.

4. Stiffness in bad position should always be corrected, so that if we are to have permanent loss of movement, we shall have a useful limb.

The line of treatment adopted depends on the cause of the stiffness. Let us first consider the cases that are due to adhesions within the joint. If these are firm and many, two courses are open to us. First, the continuous application of force through some form of splint, whose action depends on the pull of gravity, the pull of an adjustable cord, or the pull of an elastic band. Examples of these for the knee are the simple inclined splint, bent, on which the thigh and knee rest, while the leg and foot are unsupported; the jointed posterior splint with a turn buckle; the Turner screw and the jointed posterior splint with a strong elastic band connecting the two parts and tending constantly to approximate the leg and thigh. All of these may be reversed to straighten a stiff bent knee. All are useful and require little attention. The second course is that of progressive forcible manipulation under an anesthetic, with fixation in each new position until the pain disappears. This process may require four or five anesthetizations, under no one of which should the movements be continued to a point

at which great force is needed, or a violent reaction is set up. In my hands, this method has been the most successful. It takes time and great care, and must be accompanied by measures to keep up the tone of the muscles that act on the joint.

When adhesions are comparatively weak, and can be easily broken down, then one anesthetization under which the joint is put through its full range of motion only once (a point very wisely insisted on by Jones) may be thoroughly successful. In such cases no splint should be used, massage should be begun the same day, and active and passive motions continued immediately.

When stiffness of joints is due to injury of soft parts outside the joint, or to the formation of dense scar tissue following sepsis, gradual stretching is the only feasible method, unless something can be gained by dissecting out tendons or muscles that are bound down in scar. Fingers are most commonly stiff from this set of causes. Forcible manipulation here is valueless, as it simply tears soft parts and forms more scar tissue. Elastic traction will do wonders in flexing stiff, straight fingers. It can be applied by means of a leather glove, to the fingers of which are fastened elastic bands, which are made fast to a splint or plaster that hold the wrist hyperextended. It is best to attack the phalangeal joints in succession, beginning at the distal, the proximal ones being fixed meanwhile. In this way the successive segments can be pulled down till the fingers are curled up in the palm of the hand. This process must be very slow in order to stretch thoroughly the soft parts involved. If extension instead of flexion is the desideratum, then a flat, anterior splint can be applied to the successive joints as in gaining flexion, the elastic pressure being obtained by straps over the backs of the fingers. All treatment of stiff finger joints should be undertaken with the wrist in hyperextension. It is most important to keep up the power of the forearm muscles during this treatment by means of massage or electrical stimulation. If the stiffness is due to nerve injury and resultant trophic changes, then our efforts must be devoted to prevention of deformities, retention of the joints in good position, and preservation of the muscle power by electrical stimulation until the nerve supply is reestablished.

When stiffness is due to bony deformity or overgrowths, surgical interference to restore normal contours is primarily necessary. Such surgery is difficult, and its results are problematic.

NERVE INJURIES

Connective tissue formation is one of the most serious difficulties with which we have to deal. Almost all the wounds we see are badly scarred because of the sepsis and because of the great destruction of soft tissues. Masses of scar tissue lie in and around joints, in muscles, and around nerves and bone. Their vitality is low and they are extremely vulnerable to infection. In dealing with them, several principles must be observed. First, when scar tissue interferes with motion, it should be excised as widely as possible, and the fresh tissue brought together. Second, one should be sure that there is no latent infection in connective tissue before attempting any operation on bone or nerves, such as a bone graft or a nerve suture. Certain fixed periods of time after the healing of a wound have been laid down as sufficient to assure the disappearance of sepsis in scar tissue. In nerve cases this is often said to be from six weeks to three months, and in bone cases from six months to a year. Unfortunately, such periods are not always sufficient, and it is impossible to tell by examination when latent sepsis has disappeared. Gas gangrene and virulent sepsis have frequently occurred in patients operated on after a year or more from the time of healing. A useful procedure, and one that I have applied with success, is as follows:

In nerve cases, as soon as the wound is healed and the skin is clean, operation should be performed and the damaged nerve explored. Scar tissue should be excised and the cut ends of the nerve cleared. The wound is closed tight, or with a small drain, and left for ten days. If there is no sepsis, it is easy at the end of that time to do a second operation and suture the nerve. When a bone operation is necessary, such as a bone graft, one should wait till the wound is firmly closed and the scar has been more or less softened and mobilized by massage, perhaps six weeks or two months. Then one may operate and prepare the bone field, excising scar tissue. One should cut the channels for the graft in the bone fragments and do everything except the critical step, such as the fixing of the graft. Then one should close the wound and wait ten days. If there is no flare up, the operation can be safely completed. In either case, if there is a flare up after the first operation, comparatively little harm is done, and the area can be efficiently drained without fear of nullifying the results to the patient. This procedure involves the discomfort of two operations, but is, I am sure, the only safe way.

Peripheral nerve injuries are extremely common in war wounds. They are of all types, complete division with much loss of substance, partial division, or irritation from surrounding scar. They may be single or multiple. Certain nerves, from their exposed position, are more commonly involved. The lesion may be anywhere from the spinal cord to the periphery. Treatment depends on the type of the injury, and this can be determined only by the most accurate and careful diagnosis based on a thorough anatomic knowledge. Electrical examination with the faradic and galvanic current is absolutely essential, and provides the only means in many cases to distinguish between true organic lesions, and functional paralysis. It is essential that the surgeon who comes in contact with these cases shall familiarize himself with the distribution of the nerves, both motor and sensory, to a degree that is rarely done in civil life. A careful review of nerve and muscle anatomy will be of the greatest value to any surgeon who is to treat war wounds. Treatment falls into two classes, the operative and the mechanico-electrical.

Complete lesions of nerves, when due to actual cutting or of scar formation within the nerves, or to constricting bands of fibrous tissue, must be explored, and sutured, resected or cleared. Partial and irritative lesions are usually better left surgically alone, as the tendency to recover spontaneously is very great if any fibers of the nerve trunk are still intact. Recovery in all cases is much aided by electrical treatment, which maintains the tone of the muscles, and by splints and massage, which prevent deformity, and maintain the flexibility of the joints. Nothing is more discouraging than to see the muscles supplied by a recovering nerve begin to regain their power, uselessly, because they have to pull against the resistance of deformed rigid joints.

There are exceptional partial lesions of nerves, in which scar tissue pressure causes severe and continuous pain, that must be operated on. Occasionally it is even necessary to do a section of the nerve above the point of injury and resuture it. These cases of so-called causalgia are among the most trying that we see, and resemble closely the severe cases of trigeminal neuralgia.

The prognosis of nerve suture grows worse in proportion to the length of time after the injury; but nerves will recover if sutured, very long periods after they are cut. After suture, the length of time for recovery varies from six months to two years, the musculospiral usually being the quickest, and the sciatic the slowest.

The technic of nerve suture should be as simple as possible. A long incision in the course of the nerve, isolation of the nerve above and below the wound in normal tissue, and dissection of the nerve from these starting points through the scar tissue to the point of damage. One should never try to find a nerve in scar tissue at the point of injury. The nerve trunk should be handled as little as possible, and it is safer to handle it, when necessary, with the fingers, or with mouse-toothed forceps, which grasp only the areolar tissue of the nerve sheath, than it is to use smooth forceps, which slip and squeeze. When the nerve ends are found, they should be grasped in turn at the tips, and then serial sections made part way through the trunk with a sharp knife until good nerve fibers appear. At that point the section should be completed. This scheme avoids much handling of the nerve. Approximation of the cut ends of the nerve should be obtained by movements of the nearby joints, which will often make up for a gap of 1½ or 2 inches. If this is not sufficient to allow the nerve ends to come together without tension, then freeing of the nerve trunk in both directions for long distances may be employed. In some nerves, length may be gained by transposition. Thus the ulnar may be transposed from the back to the front of the arm. Moderate tension at the point of suture does not seem to preclude good results, but it is better, if possible, to have the ends come together without tension. If none of these measures will serve to approximate the ends, then some form of nerve grafting may be employed. How successful this procedure is I do not yet know. Suture is best done by a series of interrupted stitches through the sheath only, around the periphery. As few of these as will serve to form a good joint should be used. Sutures through the nerve trunk should be avoided if possible. Either fine silk or fine catgut are good materials for the suture.

Various methods of wrapping the suture line in fascia or in Cargile membrane or other substance to prevent constriction of new scar are used. These measures sometimes defeat their own object by causing more scar tissue to form. The best plan seems to be to find a fresh muscle groove in which to bury the suture line. I have yet to see implantation of one nerve into another serve a useful purpose.

In general, the results of nerve suture are extremely encouraging, but their success is dependent on two things, early operation and careful mechanical and electrical after-treatment of the tissues supplied.

CONCLUSION

It has been my desire in this article to give physicians in the United States a summary of the sort of work that will face them all, to a greater or less extent, when our men have gone through some of the actual fighting in the battle front. It is intended to give an idea of how much can be done toward restoration of the war cripples, and of what value reconstructive surgery is. In closing, let me say a word of appreciation of the work that has been done in England toward the rehabilitation of thousands of men, who, before this war, would have been discarded as cripples. Sir Robert Jones has done much to center attention on this reconstructive work, but there is much left to be done. I trust that the Medical Corps of our own Army will be able to take up the good work where he has left it off, and that the application of orthopedic principles, added to those of surgery, will do much to neutralize the effects of the frightful destructive injuries that the war is sure to produce among our men.

TREATMENT OF ECLAMPSIA

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Convulsive toxemia, except in a small minority of instances, is always preventable. There are even those optimists who state that if certain measures of prevention are carried out, eclamptic convulsions will cease to exist.

Be this as it may, the symptoms of a pregnancy toxemia are readily recognizable. Witness the almost entire absence of convulsive toxemia among the antepartum patients of a maternity hospital and among patients in private practice, who are under conscientious medical observation from early pregnancy, and who faithfully follow the directions of their medical attendant. The exceptional cases that "get by," so to speak, are the fulminant cases of hepatic toxemia, with no edema, little change in the composition or output of the urine, and with convulsions following shortly on the onset of the nausea and vomiting, headache or visual disturbances.

The nausea, vomiting, headache, edema, diminished urinary output, constipation, eye symptoms, nervous symptoms, and high blood pressure, aside from the urinary findings of albumin, casts, blood, indican, acetone, and possibly faulty nitrogen metabolism, are usually, if not always, sufficiently plain of the clinical picture of pregnancy toxemia. Physicians, hospital interns, and trained nurses after very little experience recognize the picture, social workers in the tenements have been known to, and even the much maligned midwife, in spite of her at present all too short period of instruction, soon acquires the knowledge that permits the detection of beginning pregnancy toxemia.

We have all had cases of eclampsia in our practice. When such a calamity occurred, it was because we did not watch our cases of pregnancy as carefully as we should, because the patient did not apply for treatment until the toxemia was well advanced, or because the patient neglected or refused to carry out simple preventive or curative measures — would not report for observation, failed to send specimens of urine for analysis, neglected her bowels, or indulged in alcohol or a high nitrogen diet, or both.

If it be only partially true that the early recognition and treatment of pregnancy toxemia will eliminate convulsive toxemia with its high mortality, then surely

the preventive treatment is to be reckoned with and is all important.

PREVENTIVE TREATMENT

For years it has been realized that thousands of pregnant women are practically unobserved, until at or near their date of confinement. For instance, patients of maternity hospitals, midwives and all too often of private practitioners are not even seen until after the onset of labor. In 1917, 141,564 births were reported to the New York Department of Health. Out of this number it is perhaps safe to state that 75,000 women went into labor without any prepartum observation whatever.

Hence a long step forward in the prevention of eclampsia is the attention that in the past few years has been directed to the importance of prenatal care of women, especially of the poorer class, for the purpose of reducing infant and maternal mortality.

One outcome of this agitation is the recent organization of the Maternity Service Association of the City of New York, organized mainly, if not entirely, through the earnest and untiring efforts of Dr. Ralph W. Lobenstein, in conjunction with the New York Department of Health.

One aim, among others, of the nurses of a maternity center is to seek out, among the women of the tenements, those showing signs of pregnancy toxemia, kidney insufficiency if you will, and refer such women to the proper clinic or hospital of the sanitary zone in which they reside.

Most maternity hospitals hold daily, biweekly or triweekly prenatal clinics, with indifferent or even deplorable results by reason of the difficulties and cost of a comprehensive "follow up" system. This at least has been our experience at Bellevue and the Manhattan Maternity. It is not unusual for eclampsia to develop among the patients after registering in the prenatal clinics.

Let us glance for a moment at the working of the first maternity center, established at 219 East Seventy-Ninth Street, in the so-called Zone 7, this being the district to which the Manhattan Maternity is now confining its work. Incidentally it is not too much to state that we are entering on a new era in the prevention of eclampsia. During January, 1918, twenty patients suffering from various prenatal and postpartum conditions were referred by the nurses of the maternity center to the Manhattan Maternity. Nine of these women received into the hospital were instances of pregnancy toxemia. Five were primiparas, four multiparas, the blood pressure ranged from normal to 228 mm.; all had albumin in the urine, four had casts, and one had blood; gastric disturbances were present in all and edema in most; eleven convulsions occurred in one woman, and two in another after admission; seven had labor induced by Champetier de Ribes bags; the two convulsive cases went into labor spontaneously. In only one instance were forceps used. In one twin case version and breech extraction was demanded. In a fetus dead from prolapse of the cord, perforation and extraction were performed. All the nine mothers are alive today.

Of the ten children, there being a twin case, one was lost from prolapse of the cord, one was stillborn at term, probably from toxemia, and one, a 3-pound macerated fetus, was delivered. This patient had experienced seven previous stillbirths. She had a negative Wassermann reaction. One can hardly question but that the saving of all the mothers and the seven babies out of ten was due to the early recognition and treatment of the preeclamptic state.

CURATIVE TREATMENT

Our time-honored principles of the curative treatment of toxemic convulsions, namely, (1) control of the convulsions; (2) elimination of the toxins, and (3) termination of the pregnancy, still hold good, although recent clinical experience has somewhat modified them.

A certain number of eclamptic patients, from 8 to 10 per cent. for a minimum, will die, no matter what treatment is used or not used, and the majority, 80 or 90 per cent., will recover under a conservative treatment, which does not include shock-producing operations or shock-producing drugs.

A one-time advocate of active surgical and medical treatment, and bitterly opposed to morphin in eclampsia, experience of the past five years has radically changed my views and teaching. Like many another obstetrician, I frankly confess to have been won over to the use of morphin. I stand for a reasonably conservative treatment, neither an ultraradical, with its incisions of the cervix, accouchment forcé, difficult forceps or version, vaginal or abdominal cesarean operations on the one hand, nor an ultraconservative treatment, with its main reliance on morphin and eliminations, on the other. So long as eclampsia is a mystery, a disease of theories, no one treatment is applicable to all cases.

At the same time, in spite of the claims of many, it is very difficult or impossible to individualize one's cases. All eclamptics have toxemia as the underlying causative factor, whatever the clinical variety, liver, kidney or acidosis. In given instances an ultraconservative treatment might cause more harm than an ultraradical treatment. One would, perhaps, unhesitatingly accept the ultraconservative method were it not for the clinical fact, which, as far as I am aware, has never been disproved, namely, that the shorter the time that elapses between the first convulsion and the emptying of the uterus, the better the prognosis for mother and fetus. This apparent fact I referred to in 1913, and clinical observation since that time has strengthened the belief.

Given a case of convulsive toxemia: While the treatment is still empiric, a modified conservative treatment has given me the best results. Chloroform, nitrous oxid, and even ether, should be avoided if possible. The first has been shown to predispose to or cause hepatic necrosis; the second temporarily increases blood pressure and favors cerebral congestion. Ether is the safest. It should be borne in mind that any vapor anesthesia long continued lessens the patient's chances.

A full dose, half a grain of morphin, is administered hypodermically in place of vapor anesthesia. A catheterized specimen of urine is now taken for examination. The stomach is then washed out with a sodium-bicarbonate solution, and 2 ounces of magnesium sulphate in solution are placed in the stomach before withdrawal of the stomach tube. Some use castor oil in place of the magnesium sulphate. I sometimes substitute 3 drops of croton oil in sweet oil. Magnesium sulphate seems to act promptly and with very little irritation. A colonic irrigation of several gallons (from 4 to 5) of a 5 per cent. glucose solution is now

given. Some use sodium bicarbonate. I never use sodium chlorid solution.

If possible, the patient is placed in a darkened room, and kept as quiet as possible. In a hospital ward screens are placed about the bed. The importance of free ventilation is to be remembered. The morphin is repeated in smaller doses (from ⅛ to ¼ grain), according to indications, keeping the respirations in the neighborhood of 10 or 12. I do not follow a routine. In patients of marked nervous instability, a full dose of sodium bromid (from 30 to 40 grains) in solution by rectum often assists the morphin in controlling the convulsions. I have entirely abandoned the use of chloral hydrate.

I am still uncertain whether the morphin increases the infant mortality. Possibly it does. Even in high systolic blood pressure (from 175 to 200 mm.) I do not employ phlebotomy as frequently as I formerly did, as I fear the concentration of the toxins and the sudden subsequent fall of blood pressure with even spontaneous labor, as has been observed in the use of veratrum viride.

Multiparas, in the absence of obstructed labor, with their comparatively short period of prospective labor ahead of them, are ideal cases, good risks for the conservative morphin, eliminative, noninterference treatment. Primiparas, on the other hand, with their twenty hours of prospective labor to face and their greater intra-abdominal pressure, are not such good risks. And then unfortunately eclampsia is four times more common in the latter than in the former.

An arrangement of electric lights in a rack is now placed over the patient wrapped in blankets, and a moderate perspiration is kept up for several hours. I find this plan of sweating preferable to the usual hot pack, because the patient is less disturbed by it, there is less danger of chilling of the surface in changing, better control of the degree of sweating is had, and sudden concentration of the toxin is avoided. The danger of oversweating is to be reckoned with. During the sweating, water, if possible, is freely administered.

So much for the control of the convulsions and the eliminative treatment. Aside from the first full dose, and the repeated smaller doses of morphin, most obstetricians are in accord with the foregoing treatment; but whether the termination of the pregnancy or labor shall be spontaneous or artificial has caused endless argument. Eclamptic patients are the worst kind of surgical risks; they are most susceptible to shock—shock of operation, shock from cardiac depressants like veratrum viride, phlebotomy and oversweating.

Opposed to the purely expectant plan regarding delivery stands the clinical fact, already referred to, that the shorter the time that elapses between the first convulsion and the emptying of the uterus, the better the prognosis for mother and child.

The beneficial results obtained from the removal of the fetus and uterine contents is largely, I believe, a matter of pressure relief, not the doing away with the nitrogenous output of the fetus or placenta: relief from pressure on the kidneys and renal vessels, pressure on the intestine, portal circulation and liver. Witness the frequency of eclampsia at or near term, the severity of the attack in hydramnios cases, in twin pregnancy, and on the other hand, the improvement so frequently observed after spontaneous or artificial rupture of the membranes. However, better an expectant attitude, with our main reliance on morphin and eliminatives, than a shock-producing delivery operation.

A one-time enthusiast in the free employment of veratrum viride in eclampsia, I frankly confess to having changed my views. I fear its shock-producing effect, although I still occasionally use small repeated doses in selected cases. Glyceryl trinitrate must be reckoned with to reduce arterial pressure, and for its diuretic action. Chloral hydrate I have abandoned, and I use sodium bromid in its place. The treatment of the overwhelming of the cardiovascular system by the toxin or toxins, with the accompanying collapse and pulmonary edema, is based on general principles, namely, caffein, epinephrin chlorid, cupping, intravenous infusions, oxygen, and even strychnin.

Stroganoff with the morphin treatment and an ultraconservative surgical treatment in 360 cases claims a maternal mortality of 6.6 per cent. and a fetal mortality of 21 per cent. Tweedy of the Dublin Rotunda with morphin and a less conservative surgical treatment, in seventy-four patients had a maternal mortality of 8.11 per cent., and a fetal of 30 per cent. Tweedy delivered by forceps after dilation of the cervix; Stroganoff gave large doses of chloral hydrate by rectum.

Two or even three grains of morphin are given in the first twenty-four hours. Others in smaller series of cases have had similar results. Kosmak with morphin elimination, and phlebotomy with a blood pressure over 175 systolic, in thirty-five cases had a maternal mortality of 8.6 per cent., and a stillbirth mortality of 40 per cent.

Difficult forceps operation, forcible dilation of the cervix, incisions of the cervix, and vaginal cesarean section have no place in the modern treatment of eclampsia at term. A single low forceps operation is always in order. Ether is the only anesthetic to be used for any operation.

The same may be said of hydrostatic bags to induce or shorten the labor, as well as the manual dilation of a soft, already partially dilated cervix, to permit of a medium or low forceps operation. My belief is that in the presence of a disease with such a high fetal mortality from any treatment, perforation of the head and a careful extraction of the body should be justified to shorten the interval between the first convulsion and delivery in certain instances.

Until we know more of the causative factors in eclampsia, abdominal cesarean section will always demand a place in the treatment. I believe the indications for the operation are still limited by reason of the remarkable results that have been obtained from the morphin treatment.

Abdominal cesarean section must be considered in a primipara with a long, undilated cervix, to anticipate the twenty hours of spontaneous labor that she would otherwise pass through. A twenty minute abdominal cesarean section, in our present knowledge of eclampsia, would appear preferable to the shock of a difficult version and extraction in a shoulder presentation, or the shock of a prolonged labor in moderately obstructed labor, whether of pelvic or of fetal origin.

I have yet to convince myself that the intensity of the toxemia is an indication for cesarean section. I look on the operation as a substitute for the more shock-producing operations, and to save certain patients from a twenty hour labor and pressure, especially primiparous patients. With the prospect of a short labor, cesarean section does not appeal to me.

It would appear, however, that abdominal cesarean section at term and vaginal cesarean section in the middle third of gestation have their indication in primiparous patients with undilated cervix, and with the familiar clinical picture of profound toxemia, namely, scanty urine, loaded with albumin and casts and especially blood, by catheterization of the bladder in these patients; frequently convulsions, the coma persisting during the whole period of the intervals; retinal changes and hemorrhage, as shown by the ophthalmoscope; and persistence of the cyanosis of the convulsions into the intervals.

A review of the present and prospective obstetric situation causes a recurrence of the reflection that the very poor and the well-to-do are today receiving the best obstetric care, while those of the so-called middle class are the ones, who, all too often, suffer from indifferent prenatal attention.

28 West Fifty-Sixth Street.

THE RELATION OF BLOOD PRESSURE TO CONVULSIONS *

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There is some factor at work in the course of a convulsion that brings it on and again stops it. That the convulsion stops is an argument in itself against the belief that a chemical substance reaches such a concentration as directly to produce the convulsion. If there is in the blood a chemical, the concentration of which increases to a point at which it produces a convulsion, does its decrease in concentration or disappearance permit the convulsion to end? From the following observations we may think of the chemical as only producing an edema of the brain. The chemical continues as an increasing factor, and the balance between the intracranial pressure and the blood pressure, the variable.

It is well known that the blood pressure is a function of the intracranial pressure, rising directly with it. Normally the blood pressure is higher than the intracranial pressure. The height of the blood pressure over that of the intracranial, or the difference between the two, is a margin of safety. As these two approximate, as the margin diminishes toward zero or even to a negative quantity (that is, when the blood pressure is less than the intracranial pressure), less blood is sent to the brain in a direct proportion. As the margin remains at a small positive quantity, the brain must undergo some changes; for example, the vasomotor center fags. As a consequence, the blood pressure, which has been maintained as high as possible to counteract the high intracranial pressure, drops. The intracranial pressure now becomes greater than that of the blood, the margin a negative quantity; the pupils dilate, and the convulsion comes on. The sharp, tense contractions of the muscles play a vicarious part by forcing the blood from the periphery and raising that in the brain until the margin is again a positive quantity. With its renewed blood supply the centers take up their work again for the time.

OBSERVATIONS

All measurements were made with the Tycos apparatus.

OBSERVATION 1.—A colored man, aged 55, entered while in coma. There was marked edema. The urine was acid (methyl red); it contained albumin, 6 gm. per thousand, and casts of all types in large quantities, but no sugar. The clinical diagnosis was uremia. At the point marked *X* in Chart 1, immediately after the fourth convulsion, 1/100 grain of nitroglycerin was put on the tongue. It will be noticed

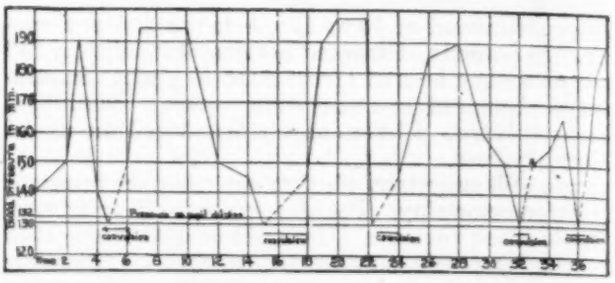

Chart 1.—Blood pressure in Observation 1. In this and the following charts, the ordinate represents the blood pressure in millimeters, and the abscissa, the time in minutes.

that the blood pressure did not rise as usual to 190 or 195, but fell with another convulsion. Only four observations are recorded, but ten were taken with similar rising and falling pressure and convulsions.

TABLE 1.—PROTOCOL OF OBSERVATION 1

Time, A.M.	Blood Pressure		Time, A.M.	Blood Pressure	
5:03	140		5:24:45	133	Pupils dilated
5:05	150		5:25:10	130	Convulsion
5:06	190		5:25:15		Convulsion ended
5:07	140		5:27	145	
5:07:30	132	Pupils dilated	5:29	185	
5:07:40	130	Convulsion started	5:31	190	
5:09	150	Convulsion just ended	5:32	170	
			5:32:30	160	
5:10	190	Stayed at this pressure until after 5:10	5:34	150	
			5:34:30	133	Pupils dilated
			5:35		Convulsion over; 1/100 gr. nitroglyc. on tongue
5:15	150				
5:17	145				
5:18:1	132	Pupils dilated	5:37	155	
5:18:15	130	Convulsion started	5:38	165	
5:21	145	Convulsion just ended	5:38:50		Convulsion
			5:39:30	160	Convulsion
5:22	190		5:40	180	
5:23	197	Until after	5:41	190	

OBSERVATION 2.—In a pregnant white woman, aged 23, convulsions came on gradually in afternoon and increased in their rate of occurrence and severity. The urine was acid,

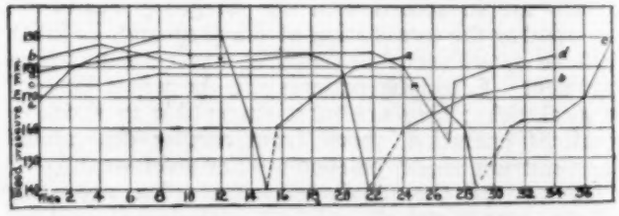

Chart 2.—Blood pressure in Observation 2.

and contained albumin, 7 gm. per thousand, and casts of all types, but no sugar. Four observations of the eight taken are charted; the remaining four gave the same findings.

At point *X*, Observation D, Chart 2, 15 drops of epinephrin were given. The blood pressure was already on the way down, but was stopped, and the usual convulsion did not take place.

TABLE 2.—PROTOCOL OF OBSERVATION 2*

Time, P.M.	Blood Pressure		Time, P.M.	Blood Pressure	
A.—			11:31:30	140	Convulsion
11:17	170		11:31:45	160	Convulsion ended
11:19	178				
11:21	183		11:35	170	
11:25	190		11:39	182	
11:29	190		B.—		
11:31	160		12:10	180	
11:31:15	146	Pupils dilated	12:14	188	

* From the Department of Pathology, University of Cincinnati College of Medicine.

TABLE 2.—*Concluded*

Time, P.M.	Blood Pressure		Time, P.M.	Blood Pressure	
12:20	180		1:17	163	
12:24	183		1:19	163	
12:28	185		1:21	170	
12:30	180		D.—		
12:31	160		1:30	140	
12:31:30	145	Pupils dilated	1:38	185	
12:31:30-32	140	Convulsion	1:40	184	
12:34	160	Convulsion ended	1:42	185	
			1:44	185	
C.—			1:46	185	
12:45	175		1:48	185	
12:49	175		1:50	183	
12:53	178		1:52	182	
12:59	177		1:54	180	
1:10	178		1:54:10		Hypo of epinephrin, 15 drops
1:13	160				
1:13:15	146	Pupils dilated	1:55	170	
1:13:30	140	Convulsion	1:56	165	
1:16	160	Convulsion ended	1:57	177	and no convulsion

* A, B, C and D represent the conditions on either side of the convulsion.

OBSERVATION 3.—A man, aged 63, with uremia, had had a similar attack three months before. The urine was acid; it contained albumin, 3 gm. per thousand, and casts of all types

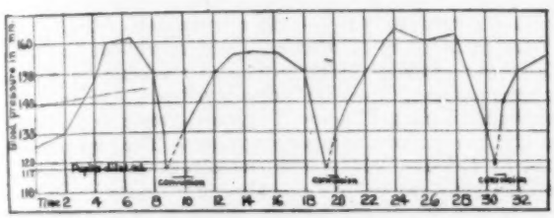

Chart 3.—Blood pressure in Observation 3.

in large quantities, but no sugar. The rise and fall of the blood pressure was similar to Observation 2, save that the entire system was lower.

TABLE 3.—PROTOCOL OF OBSERVATION 3

Time, P.M.	Blood Pressure		Time, P.M.	Blood Pressure	
7:28	128		7:50	150	
7:30	130		7:51	160	
7:32	148		7:52	165	
7:33	160		7:54	160	
7:35	161		7:55	162	
7:36	150		7:58	130	Pupils dilated and a convulsion started before another blood pressure reading could be taken
7:37	120	Pupils dilated			
7:37		Convulsion			
7:38		Convulsion ended			
7:39	140				
7:40	150				
7:41	155				
7:46	150		7:59	130	Convulsion ended
7:47	130		7:60	150	
7:47	120	Pupils dilated	7:62	155	
7:48	130	Convulsion ended			

OBSERVATION 4.—These observations were taken at 2 a. m., when the patient was brought into hospital; the convulsions had started early the morning before. At the beginning the blood pressure very likely rose to 180 or 190, but toward

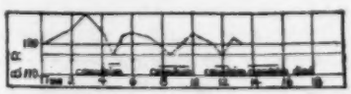

Chart 4.—Blood pressure in Observation 4.

the end the ability to maintain the advantage given by the muscles in convulsions was not possible. In addition, the muscles were fatigued.

TABLE 4.—PROTOCOL OF OBSERVATION 4

Time, A.M.	Blood Pressure		Time, A.M.	Blood Pressure	
2:16	120		2:26	123	Convulsion ended
2:18	125		2:27	121	
2:19	130	Convulsion	2:28	120	Pupils not observed
2:21	123				
2:22	125		2:29	122	
2:22:30	123		2:30		Convulsion
2:23	120	Pupils dilated Convulsion	2:30:30		Patient died during convulsion

SUMMARY AND CONCLUSIONS

Detailed observations on four patients with convulsions show that a convulsion is precipitated in all probability when the blood pressure becomes lower than the intracranial pressure, and that measures taken to raise the peripheral pressure will stop a convulsion, since the blood pressure is a function of the intracranial pressure. It logically follows that measures must be taken to reduce the intracranial pressure in order to accomplish any permanent relief.

A NEW METHOD FOR ESTIMATING TOTAL BLOOD VOLUME IN ANEMIAS

PRELIMINARY REPORT

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NEW YORK

The total quantity of blood in the human body is a problem that has baffled men in medical science ever since Harvey's discovery of the circulation of the blood. It is a matter of no small importance in many diseased conditions, and in functional disorders in which no organic disease exists. In recent years, attempts have been made to estimate the quantity of blood; and perhaps a brief review of methods and results will be of interest.

Welcker,[1] in 1854, devised the first method for estimating blood volume. He bled an animal, weighed the quantity of blood obtained, then washed out the blood vessels with water, and estimated the amount of hemoglobin in the washings.

Gréhant,[2] in 1882, took a specimen of blood and calculated the percentage by volume of oxygen by extraction with a gas pump. The animal was made to breathe carbon monoxid gas for a certain time, and the total amount of carbon monoxid absorbed was determined by analysis. A second specimen was next taken, and the percentage of oxygen by volume was again determined. The difference between the percentage by volume of oxygen before and after the administration of the carbon monoxid gas is the percentage by volume of carbon monoxid in the blood, since the latter gas displaces an equal volume of oxygen in the blood.

If the total volume is indicated by V, and the percentage by volume, that is, the number of cubic centimeters of carbon monoxid to each hundred c.c. of blood, is indicated by v, then the total quantity of blood equals:

$$\frac{V}{v} \times 100.$$

By this method, Gréhant established these percentages by volume: for the dog, 7.7; the rabbit, 5; the cat, 5, and the bird 10 per cent. of blood per body weight.

Bischoff,[3] in 1856, applied Welcker's method to two men guillotined, and obtained values of 7.7 and 7.2 per cent., respectively, of body weight.

1. Welcker, H.: Bestimmungen der Menge des Körperblutes und der Blutfärbekraft, sowie Bestimmungen von Zahl, Maass, Oberfläche und Volumen des einzelnen Blutkörperchens beim Thier und beim Menschen, Präger Vrtljschr., 1854, **4**, 11; Ztschr. f. rat. Med., 1858, **4**, 145.

2. Gréhant and Quinquaud: Measure du volume de sang contenu dans l'organisme d'un mammifère vivant, Compt. rend. Acad. d. sc., 1882, **94**, 1450.

3. Bischoff, L. A.: Bestimmungen der Blutmenge bei einem Hingerichteten, Ztschr. f. Wissensch. zool., 1856, **7**, 331; Abermalige Bestimmung der Blutmenge bei einem Hingerichteten, ibid., 1858, **9**, 65.

Gréhant's method was modified by Haldane and Smith[4] and applied to man. They obtained values approximating 5 per cent. of body weight.

Zuntz and also Plesch[5] employed in their determinations the method of Gréhant, as modified by Haldane and Smith.

Keith, Rowntree and Geraghty,[6] in 1915, injected intravenously a 1.5 per cent. solution of vital red in distilled water. Of this dye, which is disodium disulphonaphthol azotetramethyl triphenal methane, they employed 3 mg. per kilogram. Specimens were drawn before and after the introduction of the dye.

The foregoing methods present serious objections in many cases in which the blood volume is important.

The method of Haldane and Smith has no practical value in anemias, and, furthermore, the estimates by this method are apparently low.

The method of Keith, Rowntree and Geraghty is not free from criticism. They themselves cite three objections to the method:

1. There is at times a hemolysis caused by the injection of the dye. This hemolysis makes readings inaccurate, and in hemolytic anemias, hemolysis should be avoided.
2. When lipemia exists, readings are impossible. In 9 per cent., chilly sensations occurred. In 5 per cent., chills and fever occurred with a rise of temperature to 101.
3. Dyeing of the skin has occurred.

The antitoxin method of von Behring[7] deserves mention.

Quincke,[8] in 1877, attempted to estimate the blood volume from the change in the blood counts before and after transfusion with the introduction of a known quantity of blood.

In 1914 I used a method similar to Quincke's and encountered many difficulties. The patients were often far away from the laboratory. The delay in the counts made this method difficult, arduous and unreliable. When such work was deputized to assistants and interns, the percentage of error due to the personal equation rendered such calculations often highly inaccurate. I believe our methods of counting blood corpuscles are less accurate than they are credited with being. Blood counts made for the purpose of calculating blood volume should be made immediately before transfusion.

To overcome these difficulties I have devised the following method:

AUTHOR'S METHOD

The patient and the donor are prepared for blood transfusion. Lindeman cannulas are inserted into the veins. These cannulas are of 20 gage, permitting a free flow of blood. When the cannulas are inserted, a slight compression is made on the veins by a tourniquet so that the blood is not taken from a congested limb, and specimens are then taken. Blood transfusion is then immediately performed by the syringe-cannula system[9] as devised by myself without recourse to saline or other foreign material, such as citrate or herudin.

The quantity of each syringeful of blood introduced into the patient is accurately recorded. Three minutes after the completion of the transfusion, the vein of the opposite arm is tapped for a third specimen. These specimens are gathered in calibrated centrifuge tubes, each of which contains 0.2 c.c. of saturated solution of potassium oxalate. The specimens are agitated slightly to produce a thorough mixture of the oxalate with the blood in order to prevent coagulation. They are corked immediately to prevent evaporation. About 6 c.c. of blood are gathered in each tube. These specimens are centrifugalized at a speed of 3,000 revolutions a minute for a period of twenty minutes, when no further reduction in volume of the sediment occurs. The readings are then made from the scale with the aid of a magnifying glass. The percentage by volume of red and white cells, inclusive, is then recorded, correction being made for the potassium oxalate in the tubes.

If x equals the initial volume of blood in the body, and we know the initial cell percentage by volume, the cell percentage by volume of the blood introduced and the quantity of blood introduced, and also the cell percentage by volume of the patient's blood after the transfusion, it is a simple matter, by the accompanying formula, to calculate the volume of blood.

FORMULA

If
x = initial volume
a = R. B. C. vol. % of initial volume
b = volume introduced
c = R. B. C. vol. % of volume introduced
l = Final vol. % R. B. C.

Then:

$$xa + bc = l(x + b)$$
$$xa + bc = lx + lb$$
$$xa - lx = lb - bc$$
$$x(a - l) = lb - bc$$
$$x = \frac{lb - bc}{a - l}$$

The cell percentage by volume of the donor remains remarkably constant throughout the transfusion. In a series of observations I have made I find that the cell volume reduction of donors during the transfusion does not exceed 1 per cent. because of the rapidity of operation and the delay in blood dilution. The values, therefore, by this slight change in cell volume are altered too little to effect any appreciable change in the calculations.

This method, where applicable, as in anemia, is practically free from error introduced by the personal equation, and is accurate unless we assume a difference in the cell percentage by volume of the blood taken from the two arms, after allowing a mixing time interval of three minutes, which is outside the realms of probability.

In making these determinations I have encountered no hemolysis in any of the serums after transfusion as determined by inspection. This is also borne out by the fact that no reactions have been observed in the patients after transfusion. Whenever hemolysis occurs, chills and fever follow transfusion. No chills occurred in any of the cases of blood volume studies. In fact, in my syringe cannula method of blood transfusion[9] I have finally succeeded in eliminating post-

4. Haldane, J., and Smith, J. Lorrain: The Mass and Oxygen Capacity of the Blood in Man, Jour. Physiol., 1899-1900, **25**, 331. Smith, J. Lorrain: Discussion on the Blood in Disease, Tr. Path. Soc. London, 1900, **51**, 311.

5. Plesch, J.: Hämodymamische Studien, Ztschr. f. exper. Path. u. Therap., 1909, **6**, 380.

6. Keith, N. M.; Rowntree, L. G., and Geraghty, J. T.: A Method for the Determination of Plasma and Blood Volume, Arch. Int. Med., October, 1915, p. 547. This paper is recommended to those interested in the subject. From the paper, in addition to references already given, the subjoined references are reproduced:
Heidenhain: Ueber die Blutmenge der Säugethiere mit besonderer Rücksicht auf Welcker's Methode der Blutbestimmung, Arch. f. physiol. Heilk., 1857, n. f., 1, 507.
Cohnstein and Zuntz: Untersuchungen über den Flüssigkeitsaustausch zwischen Blut und Geweben unter verschiedenen physiologischen und pathologischen Bedingungen, Arch. f. d. ges. Physiol. (Pflüger's), 1888, **43**, 303.
Kottmann, K.: Ueber die Bestimmung der Blutmenge beim Menschen und Tier unter Anwendung eines neuen Präzisionshaematokriten, Arch. f. exper. Path. u. Pharmakol., 1906, **54**, 356.
Vierordt, K.: Das Abhängigkeitsgesetz der mittleren Kreislaufszeiten von den mittleren Puls-Frequenzen der Tierarten, Arch. f. physiol. Heilk., 1858, n. f. 2, 527.
Malassez, L.: Nouveaux procédés pour apprécier la masse totatle du sang, Arch. de physiol. norm. et path., Series 2, 1874, **6**, 797.
Tarchanoff, J. R.: Die Bestimmung der Blutmenge in lebenden Menschen, Arch. f. d. ges. Physiol. (Pflüger's), 1880, **23**, 548; 1881, **24**, 525.
Oerum, H. P. T.: Quantitative Blutuntersuchungen, Deutsch. Arch. f. klin. Med., 1908, **93**, 356.
Kämmerer, H., and Waldmann, A.: Blutmengebestimmungen nach von Behring und andere quantitative Untersuchungen der Blutbestandteile, Deutsch. Arch. f. klin. Med., 1913, **109**, 524.
Fries, H.: Ueber Veränderungen der Blutmenge in Schwangerschaft, Geburt und Wochenbett, Ztschr. f. Geburtsh. u. Gynäk., 1911, **69**, 340.

7. Von Behring, E.: Die Antitoxinmethode zur Blutmenge Bestimmung, München. med. Wchnschr., 1911, **58**, 655.

8. Quincke: Weitere Beobachtungen über perniziose Anämie, Deutsch. Arch. f. klin. Med., 1877, **20**, 27, referred to by Plesch (Note 5).

9. Lindeman, Edward: Simple Syringe Transfusion with Special Cannulas, Am. Jour. Dis. Child., July, 1913, p. 28.

transfusion chills. In the last 125 consecutive cases not a single chill has occurred.

The time elapsing for the performance of these transfusions was from ten to fourteen minutes.

The results obtained by means of these estimations have been most gratifying and helpful in the management of the cases.

REPORT OF CASE

History.—Miss K., aged 26, 5 feet 4 inches in height, and weighing 130 pounds, referred to me by Drs. W. A. Downs and Walter Bastedo, had suffered with gastro-intestinal disturbances for years—ever since she could remember. At the age of 16 she began to vomit blood, and had been vomiting blood at weekly intervals ever since, sometimes abundantly, and at other times in small amounts. In 1911, Sir Harold Stiles of Edinburgh performed a gastro-enterostomy without relief. The patient did not know the condition found at operation. She had had blood in the stools frequently, and had a very large hemorrhage, Dec. 26, 1917. Since her last hemorrhage she had been growing increasingly paler and weaker.

Physical Examination.—The patient had a drawn, pinched, ashy look about her face. Her friends said that only six months before she had a fairly good, rosy color. Her pulse volume was small. Her voice sounded very weak. Mentally she was very active and fully conscious, and extremely nervous and irritable. There were pulsations of the veins in the neck. Hemic murmurs were noted all over the precordium. There was no air hunger, but respirations were deeper than usual. The patient was not strong enough to raise herself in bed. She had no appetite. The stools were black and tarry. The patient suffered from constipation.

The patient, a writer by occupation, told me that her brain was usually more active, and that her ideas flowed more rapidly, after the hemorrhages. There had been no bleeding other than from the rectum and the stomach. There was no purpura or other evidence of a hemorrhagic diathesis, and no evidence of primary blood disease. The platelet count was normal. The physical examination otherwise was negative.

Transfusion and Operation.—Before the patient was taken to the operating room, she said it was useless; she was discouraged and felt that she could not live. Before transfusion, the red blood cells were 1,300,000, and the hemoglobin, 20 per cent. The blood clot was well formed, large and firm, and the coagulation time, six minutes.

Dr. Downes operated on the patient immediately after I had performed the transfusion. No evidence of a bleeding ulcer could be found. She had a velvety, boggy, congested mucosa with somewhat dilated veins, but no evidence of any bleeding point. Dr. Bastedo thought the ulcer might be of the rare variety in which the base is well hidden and buried deep in the mucosa, and not visible in spite of careful but limited exploration.

The old gastro-enterostomy did not allow a free passage for material, so that a new anastomosis was made between the first portion of the jejunum and the duodenum. There has been no recurrence of bleeding since the operation.

The amount of blood transfused was 1,500 c.c., and the time required was fourteen minutes.

The amount of blood withdrawn for blood tests before transfusion was 70 c.c.

The cell volume before transfusion was 13.7 per cent.

The cell volume after transfusion was 25.5 per cent.

The cell volume of the donor was 40 per cent.

Application of the formula reveals that the patient possessed a blood volume equal to:

$$\frac{40 \times 1{,}500 - 25.5 \times 1{,}500}{25.5 - 13.7} = 1{,}843 \text{ c.c.} + 70 \text{ c.c.} = 1{,}913 \text{ c.c.}$$

COMMENT

The patient presented a clinical picture of chronic rather than acute bleeding, because of her ability to stand her grave anemia in the presence of a small blood volume.

A very singular happening during the transfusion was her failure to note any improvement in her condition until she had received about 1,000 c.c. of blood. From that moment she noticed improvement symptomatically, and when she had received 1,500 c.c. of blood, she felt like a new person. More could have been obtained from the donor, and the patient could have accepted even more; but it was felt that she had received enough to convert her from an extremely poor surgical risk to a comparatively good one. She accepted the anesthetic very well. The operative period was one hour. On the day following her operation she expressed a desire for food. Her convalescence has been one of steady improvement, with no recurrence of bleeding. There was no chill or reaction after transfusion. She now eats many things she could not eat for many years.

This patient had a blood volume of only 40 per cent. of what she normally should have, and only 25 per cent. of her normal richness. This would give her a combined impoverishment of about 90 per cent. of her full blood strength and normal volume.

This paper is to serve merely as a preliminary report. Further estimations of blood volume in various conditions will be published in later papers.

565 Park Avenue.

TUBERCULOSIS AND SYPHILIS

EDWARD VON ADELUNG, M.D.
OAKLAND, CALIF.

For the purpose of impressing the necessity of applying the Wassermann test to tuberculous patients, and thus avoiding a considerable percentage of common error, a tabulation of the cases seen in the Alameda County Tuberculosis Clinic during the past four years is here presented.

The data were gathered in the course of regular examinations of patients in the Clinic of the Alameda

POSITIVE WASSERMANN TESTS IN TUBERCULOUS PATIENTS

Year	Tuberculous Patients No.	Positive Wassermann Tests No.	Positive Wassermann Tests Per Cent.
1914	34	8	23.5
1915	52	4	7.6
1916	61	2	3.2
1917	48	3	6.2
Totals	195	17	8.7

County Society for the Study and Prevention of Tuberculosis—a society financed by annual appropriations from the treasuries of Alameda County and Oakland City, supplemented by contributions from private purses. In this work, I have been greatly assisted by Dr. Philip F. Abbott and Dr. V. O. Saphro. The Wassermann tests were made at the California State Hygienic Laboratory, Berkeley, Calif.

In 1914, of thirty-four cases of tuberculosis confirmed by the finding of tubercle bacilli in the sputum, eight yielded positive Wassermann tests. This means that 23.5 per cent. of syphilis was found during 1914 in laboratory-positive tuberculosis. Of these eight cases of double infection, 78 per cent. of the patients were female and 22 per cent. male.

In 1915, of fifty-two cases of positive-sputum tuberculous cases, four, or 7.6 per cent., yielded positive Wassermann tests. Of these four patients, 25 per cent. were female and 75 per cent. male.

In 1916, of sixty-one cases of pulmonary tuberculosis, two, or 3.2 per cent., yielded positive Wassermann tests. Both of the patients were women.

In 1917, of forty-eight positive-sputum cases of tuberculosis, three, or 6.2 per cent., yielded positive Wassermann tests.

Summing them up for four years, it is seen that of 195 cases of pulmonary tuberculosis confirmed by finding the bacilli, seventeen, or 8.7 per cent., yielded a positive Wassermann test. This represents what would be overlooked by the average practitioner, when treating open cases of tuberculosis of the lungs without making the Wassermann test.

1206 Broadway.

ANATOMIC DEFECTS IN THE NEW-BORN DEMANDING SURGICAL OPERATION

REPORT OF A CASE OF UTERINE TUMOR

E. M. PRINCE, M.D.
BIRMINGHAM, ALA.

After a few years of surgical practice, one is impressed with the number of new-born children who have one or more anatomic defects amenable to surgical treatment, which, if not dealt with surgically, will mean the death of the infant.

During my first few years of surgical practice, when confronted with these little sufferers, I was inclined to do nothing, feeling that an infant of only a few hours, or a few days, was sure to lose its life if any major operation was attempted. During later years, however, and after operating on some of these children, I am thoroughly convinced that they are at least as able to withstand the shock of operation as their older brothers and sisters. Of course, much depends on the anesthetic and the anesthetist, when an operation is undertaken. I think that, in the very young, ether is decidedly the anesthetic of choice. Gas-oxygen is far preferable for children of more advanced years, but the extremely young are more prone to die from respiratory failure, and this is the great danger in operations on infants. It is held by some physicians that the new-born may be operated on without any anesthetic whatsoever, as the nervous system at this early age is as yet undeveloped, and they are not capable of feeling pain. I do not believe this, as I have seen every manifestation that the little patient is suffering great pain when permitted to come out from under the anesthetic while the operation is in progress. I have circumcised infants without an anesthetic, and I think any one who observes them during this little operation will be convinced that they suffer. I think an operation performed on these little subjects should be done with dispatch, with the operator taking all the time necessary to do good surgery, but wasting no unnecessary time. Before he starts the operation, he should decide just what he is going to do, and do it with care and with as few movements as possible.

When he has relieved the congenital defects and sees the little patient begin to gain the health and vigor of babyhood, he cannot help thinking he has done something worth while, for he has brought health to the child and joy to the mother.

I think the case that I report of unusual interest, as the patient must be the youngest on record to be operated on for uterine tumor.

REPORT OF CASE

A baby girl, aged 11 hours, sent me by Dr. E. C. Clayton, was a fine-looking baby except that she had a very large hernia. It seemed as if the entire intestine was in this hernia. The intestine was covered only by the peritoneum. One could look into the hernia sac and see the intestine almost as well as if it had been in a glass case. There was a decided lack of development of the left rectus muscle, and under the mass of intestine a large tumor could be felt. This I took for a hydronephrotic kidney.

Under ether anesthesia, the hernial sac was opened. It was found to contain the large intestine and all of the small intestine, the end of the duodenum being pulled down into the sac.

The tumor felt under the hernia proved to be a cystic tumor of the uterus. The uterus was enlarged to the extent that it filled the greater part of the abdominal cavity. The right tube and ovary were missing. A blind tube led from the uterine cornu out into the abdominal cavity for about an inch. An incision was made into this organ, and a large quantity of mucopurulent looking material was evacuated. The uterus then contracted to the size of a large marble, leaving room for replacing the intestine.

An examination of the endometrium through the incision showed it to be normal. The incision in the uterus was then closed, the abdomen was closed, and the child made an uninterrupted recovery.

Fearing the uterus would again become distended with the same fluid after I had closed the abdomen, I pulled the cervix down into view through the vagina. Forceps were inserted through the cervical canal into the organ in order to promote drainage.

1127 South Twelfth Street.

DAKIN'S DICHLORAMIN-T SOLUTION FOR OCULAR INFECTIONS

A. S. GREEN, M.D.
AND
L. D. GREEN, M.D.
SAN FRANCISCO

Until recently the search for an antiseptic that would influence the flora of the conjunctiva without at the same time injuring its epithelium seemed almost hopeless. It is true that many so-called antiseptics are often used with excellent results in treating infections of the cornea and the conjunctiva, but with few of them is the benefit derived due to anything but the mechanical cleansing, the possible exceptions being zinc sulphate for infections with the Morax-Axenfeld bacillus, and ethylhydrocuprein, in pneumococcus infections. This conclusion must inevitably be reached by all who have given the subject of ocular antisepsis careful study.

When the wonderful results of the Carrel-Dakin treatment were first reported from the seat of war regarding its remarkable efficacy in preventing and cleaning up the infections of wounds, it occurred to us that the method might be modified in treating infections of the eyes. Here was an antiseptic solution that was destructive to bacteria, but not to animal tissue — just the very thing ophthalmologists had been endeavoring so long to find. Therefore a 1 per cent. watery solution was used in a number of cases of conjunctivitis, 2 drops being instilled every two or three hours, but it was finally abandoned as it was found that the results were in no way superior to those obtained by the solutions ordinarily used in conjunctival infections. Even the weak solutions used for the test were found to be much more irritating

than the ordinary remedies. Accordingly, the test was dropped. Several months later, when Dakin published his article on the improvement in the method by using an oily solution known as dichloramin-T, the matter was again taken up and tried out in about two dozen cases with exceptionally satisfactory results, case histories of four being given below as examples.

METHOD OF APPLICATION

Although the use of from 10 to 15 per cent. solutions is recommended by Dakin in general surgery, we found that the best results were obtained by a 0.5 per cent. solution, instilled every hour, at least 3 or 4 drops being used each time. While considerable smarting is caused, this lasts only a moment or two, and is easily borne, even by children.

REPORT OF CASES

CASE 1.—T. L., a boy, aged 12, suffering from trachoma of several years' duration, had been given the usual treatment for trachoma, including rolling, grattage, carbon dioxid snow, and copper sulphate, without permanent benefit, for in spite of all the treatment an acute exacerbation would occur from every three to six weeks. His vision was greatly reduced, owing to pannus and corneal opacities, and at no time was he entirely free from a conjunctival discharge. Finally the 0.5 per cent. dichloramin-T solution was given a trial by instillation every hour. On the sixth day there was no discharge, and the lids were not agglutinated in the morning. After three weeks of the treatment the boy was dismissed, and up to the present time, six months later, no recurrence has taken place.

CASE 2.—E. R., a girl, aged 5, had been coming to our service at the San Francisco Polyclinic for several months on account of phlyctenular conjunctivitis. The results of the usual methods of treatment fluctuated, and finally she presented herself with an acute infection superimposed in one eye. It was swollen shut, and there was a purulent discharge due to an unidentified diplococcus. She was immediately placed in hospital and the 0.5 per cent. dichloramin-T solution instilled every hour for the first twenty-four hours, at the end of which time the swelling was greatly reduced. The drops were continued every hour the following day, and every two hours that night. At the end of forty-eight hours the child could open the eye, and very little discharge was present. The treatment was then kept up by instillation of the drops every two hours during the day, but none during the night. After the fourth day the child was dismissed from the hospital, no further treatment being required.

CASE 3.—A Japanese child, aged 4 years, presented the left eye so swollen shut that the cornea could not be seen even by the use of a lid elevator; the skin at the external canthus was badly excoriated, the condition having existed four days. No smear was obtained. The child was placed in hospital and the use of the 0.5 per cent. dichloramin-T solution begun, instillations being made every hour that day and night. The following day the swelling had receded so that the intact cornea could be seen, and at the end of forty-eight hours the eye was open. In one week from the time it was brought to the office the child was dismissed and taken to its home in the country.

CASE 4.—F. B., a boy, aged 3, when first seen had the right eye infected, the lids red and swollen shut, and yellow pus pouring out on the cheek—a typical textbook picture of gonorrheal ophthalmia. Smears revealed numerous gram-negative, intracellular diplococci. The child was placed in hospital and treated with the 0.5 per cent. dichloramin-T solution every two hours and with iced compresses that day and night. The following morning, twelve hours after, there was little, if any, improvement. One drop of 1 per cent. solution of silver nitrate was then instilled, followed by several drops of the dichloramin-T solution every hour, day and night, until at the end of thirty-six hours the swelling had gone down so that the eye was open and only a very slight discharge was present. On the third day a smear from the conjunctiva was negative for all bacteria, and the child was dismissed on the fifth day with only a very little conjunctival redness remaining.

CONCLUSIONS

Dichloramin-T in solutions of from 0.5 to 1 per cent. can be freely used as a conjunctival antiseptic without danger to the tissues. It may possibly be used in stronger solutions, but this has not been found necessary in our experience, although further trial is advocated to determine the matter. The oil solution is preferable to the aqueous, as it is less irritating and will remain longer in contact with the epithelium. Instillations should be made at frequent intervals, once every hour having been found the most satisfactory.

210 Post Street.

INCOMPLETE OUTWARD DISLOCATION OF THE KNEE

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Dislocations of the knee comprise only about 1 per cent. of all dislocations.[1] Of these, dislocations outward are exceeded in rarity only by inward dislocations and the dislocations by rotation. Stimson[2] was able to collect only 114 instances of traumatic dislocation of the knee. The dislocations were: forward, 52; backward, 34; outward, 21; inward, 4, and by rotation, 3.

Dislocation of the knee outward occurs in about 0.2 per cent. of all cases of dislocation. The condition is of interest, therefore, because of its infrequency. The case here reported is also of especial interest because its etiology differs somewhat from cases previously described and because the method of reduction used was somewhat at variance with previously described textbook methods. I have experimented on the cadaver with the method used to reduce the case under consideration, and it appeared to be the most efficient from the standpoint of conservation of the untorn portions of the joint capsule and of the ligaments, and indeed the only method by which reduction can be satisfactorily effected.

REPORT OF CASE

J. H., a German, aged 31, with a negative medical and surgical history, was admitted, Nov. 10, 1917, about 1 a. m., to the service of Dr. C. J. Pflug, St. Mary's Hospital, Jamaica, L. I.

About thirty-five minutes before admission, while the patient was crossing a dark road, he was struck from the right side by an oncoming automobile. The bumper of the car hit the patient on the lateral aspect of the right thigh just above the knee joint while the foot was relatively fixed on the roadway.

On admission the patient complained of slight lacerations about the face and of severe pain in the region of the right knee. The right leg was held in extension and the foot and the leg were rotated outward to about 20 degrees. On removal of the clothing overlying the injured joint, the lower leg was found to be abducted from the knee about 10 degrees from a straight line, rotated outward about 20 degrees, and in complete extension. The internal condyle of the femur was seen to project under the skin on the internal aspect of the knee. The patella occupied a vertical position on the lateral aspect of the external condyle. The external tuberosity of the tibia was displaced outward and backward. The internal tuberosity was occupying a position in line with

1. Stimson, L. A.: Fractures and Dislocations, Ed. 7, Philadelphia, Lea and Febiger, 1912, pp. 850-851.
2. Stimson, L. A.: Fractures and Dislocations, Ed. 7, p. 851.

the external condyle of the femur, and was displaced slightly in a forward direction. On palpation, the entire internal condyle and the intercondylar groove of the femur could be felt. The patella was absent from its normal position, and could be felt in a vertical plane on the lateral aspect of the external condyle of the femur. The entire external articular surface of the tibia could be palpated, even to the spine separating the two articular surfaces on the head of the tibia. The articular surface of the external condyle of the femur and of the internal articular surface of the tibia exactly coincided. The patient was unable to carry out any voluntary motion of the leg. Passive motion and even light palpation caused exquisite pain.

Chloroform was administered, and the reduction of the dislocation accomplished in the following manner: The leg was completely flexed at the knee and at the hip. The left hand of the operator was held behind the head of the tibia with the thumb on the external edge of the patella. The right hand grasped the leg at the ankle. After flexing, the lower leg was internally rotated, traction was made on the head of the tibia, and the leg was extended. After extension, the patella was easily slipped back to its normal position. No difficulty was encountered during this manipulation. A light splint was applied to keep the leg in extension and to prevent abduction. At the end of four days a light plaster bandage was applied to the knee in order to immobilize the joint. After one week's time the plaster bandage was split into anterior and posterior splints, and the knee massaged three times a day. Six weeks after injury, the patient was back at his accustomed duties, the function of the joint being perfect. It is to be regretted that the patient entered the hospital at a time of day when it was impossible to obtain a roentgenogram of the deformity. The condition of the patient was such that immediate reduction was demanded for the relief of pain; otherwise reduction might have been deferred and a picture taken the next morning. A roentgenogram taken the day following reduction showed no fractures or other injuries to the bones.

ETIOLOGY

The usual textbook cause of incomplete outward dislocations of the knee, according to most writers,[3] is abduction of the leg plus outward rotation; or is most commonly due to indirect violence, as in a fall on the abducted foot, and more rarely to a blow received on the lateral aspect of the external condyle of the femur. Cases have resulted from fixation of the thigh, combined with a weight falling on the inside of the lower leg.[4]

In the present case the etiology was probably as follows: As previously stated, the patient was struck directly from the right side by an automobile traveling at a high rate of speed. To the front of the car a broad steel bumper was attached, the lower edge of it corresponding approximately to the lower end of the femur of the patient. Hence, the force acted directly on the lateral aspect of the external condyle of the femur while the leg was in complete extension.

Since the foot was relatively fixed on the ground, the force could act only in the direction of abduction of the leg without rotation. In producing the dislocation on the cadaver by direct abduction without using any rotary force, I found that a similar degree of rotation existed at the end of the traumatism as was seen in the foregoing case. Hence it is probable that the degree of rotation observed in the hospital case was not the result of a rotary type of violence, but due to the resistance of certain joint structures, as is later explained.

3. Helferich, H.: Fractures and Dislocations, Ed. 5, Philadelphia, W. B. Saunders, 1902, pp. 278-280. Speed, Kellogg: Fractures and Dislocations, Philadelphia, Lea and Febiger, 1916, p. 804. Stimson, L. A.: Fractures and Dislocations, Ed. 7, pp. 859-860.

4. Speed, Kellogg: Fractures and Dislocations, p. 804. Jessup: New York Med. Jour., 1885, **41**, 12. Bull: Ibid., 1888, **47**, 215.

REPRODUCTION OF THE INJURY IN THE CADAVER

Knowing the etiology of the present case, I sought to reproduce the injury in the cadaver in order to determine, first, what the pathologic condition was, and secondly, what the method of reduction should be. A well developed cadaver was selected, and only the head, trunk and pelvis were allowed to rest on the table. The leg was held free of the table and fully extended. A small block of wood about 3 inches wide was held on the external condyle of the femur and struck heavily with a large mallet. At the same time the leg was forcibly abducted from the knee. The first attempt only partially produced the degree of injury sought, but on repetition of the force a little more strenuously, the dislocation was effectively produced. The experiment was repeated on three different cadavers. The degree of dislocation was made to correspond with that found in the foregoing case. Examination of the three joints disclosed the fact that the external condyle of the femur and the intercondylar groove could be palpated. The patella invariably lay on the lateral aspect of the external condyle of the femur at right angles to its former plane. The surfaces of the external articular facet of the tibia and the spine which separates the two articular surfaces could be palpated laterally and slightly posteriorly to the external condyle of the femur. In other words, the external condyle of the femur occupied the medial articular facet of the tibia instead of its own lateral articular facet. The injury in the cadaver differed from that in the aforementioned case in that the degree of abduction of the lower leg was about 10 degrees more than that observed in the hospital case. The degree of rotation was practically the same. The rotation outward of the lower leg when the dislocation is produced only by abduction, is to be explained by the action of the posterior crucial ligament, which is untorn in the production of the injury, and tends to limit outward displacement of the tibia by drawing the external tuberosity of the tibia backward.

PATHOLOGY

On dissection of the dislocated joints, the internal lateral ligament, the fascial expansion of the vastus internus, and the internal portion of the joint capsule were found to be torn along a line extending from the lower pole of the patella to the posterior border of the internal condyle of the femur. From the lower pole of the patella the tear extended downward along the internal edge of the ligamentum patellae almost to the tibial tubercle. The anterior crucial ligament was ruptured in each case within one-half inch of its attachment to the femur. The posterior crucial ligament was not torn but was put on the stretch. The attachments of the hamstring muscles and the posterior muscles of the lower leg were not torn. The semilunar cartilages of the knee were undisturbed. The ligaments and the joint capsule on the external and posterior aspects of the knee were uninjured.

METHODS OF REDUCTION

The usual method of reduction[5] described in textbooks is by traction on the lower leg combined with coaptive pressure at the joint, with the leg in extension. The method will usually suffice in cases in which the degree of dislocation does not absolutely

5. Cotton, F. J.: Dislocations and Joint Fractures, New York, Rebman Company, 1910, p. 492. Speed, Kellogg: Fractures and Dislocations, p. 804. Helferich, H.: Fractures and Dislocations, Ed. 5, pp. 287-288. Stimson, L. A.: Fractures and Dislocations, Ed. 7, p. 860.

displace the condyles from all contact with their respective articular surfaces on the tibia; in other words, if the spine between the two surfaces on the head of the tibia does not pass over the crest of the external condyle, such a method will usually be effective. When the displacement is as great as indicated in this case and in the dislocation produced on the cadaver, however, such a method not only fails in its purpose, but may also result in further damage to the ligamentous structures of the joint. Reduction could be obtained by this method in the cadaver, that is, by traction and coaptive pressure; but the rent in the internal ligaments and the joint capsule was enlarged to a considerable degree, and the posterior crucial ligament was further stretched to such an extent that rupture began at its insertion into the femur.

The method of reduction used in the hospital case and repeated on the cadaver was as follows: The leg was flexed at the hip and knee, which action resulted in decreasing the stress on the posterior crucial ligament and on the untorn portions of the ligaments, comprising the external capsule of the joint, the insertions of the hamstring muscles, the quadriceps, and the gastrocnemius and soleus muscles. Then, on inward rotation of the leg, the lateral displacement was corrected. When reduction was attempted by the method just described, it was found that it resulted in a further decrease in tension on the untorn joint ligaments. When the leg was extended and traction exerted behind the head of the tibia, the deformity was entirely corrected and the leg brought into the normal extended position. The patella was then easily slipped back into place.

It will be seen, therefore, that the method of choice in reducing such a dislocation should be one that will not only correct the displacement, but also conserve to the greatest extent all the ligaments and muscular attachments that have not been damaged in the production of the injury. With the displacement as great as here represented, traction with coaptive pressure at the joint does not result in such a conservation, but puts all the untorn ligaments further on the stretch, and will even cause further damage to them.

In a case reported by Jessup,[6] the degree of dislocation was practically identical with that observed in the present case. His method of reduction was by flexion at the hip and knee, combined with inward rotation and followed by extension. His paper, however, contains no comment on the pathology of the condition, or why such a method of reduction was used. The same patient was reported three years later by Bull[7] as having a functionally useful knee. He also made no comment on the pathology, but described the method of reduction. In Jessup's case the dislocation was produced by a heavy weight falling on the inside of the leg while the thigh was relatively fixed.

Speed,[8] quoting Hardoun's experiments on the cadaver states that the vastus internus may be ruptured, as also the crucial ligaments. He (Hardoun) demonstrated that outward dislocation of the knee, complete or incomplete, is impossible without rupture of the anterior crucial ligament. The patella may be displaced laterally and resist attempts at reduction.

CONCLUSIONS

1. Incomplete traumatic dislocation of the knee outward may be produced by abduction at the knee without rotation of the lower leg. Such force produces an oblique tear in the internal lateral ligaments and joint capsule, extending from the posterior border of the internal condyle of the femur to the lower pole of the patella, with rupture of the anterior crucial ligament.

2. The outward rotation of the leg seen in the experiments on the cadaver, when the dislocating force was pure abduction, appears to result from the action of the untorn posterior crucial ligament. This ligament limits outward displacement of the tibia by causing outward rotation of the leg and slight backward displacement of the external articular surface of the tibia.

3. To conserve the posterior crucial ligament and all untorn portions of the joint capsule, ligaments and muscular insertions, the mechanism of reduction should be by flexion of the hip and knee, combined with the necessary amount of inward rotation. This manipulation may then be followed with safety by full extension, in which position the leg should be immobilized.

330 West Twenty-Eighth Street.

6. Jessup: New York Med. Jour., 1885, **41**, 12.
7. Bull: New York Med. Jour., 1888, **47**, 215.
8. Speed, Kellogg: Fractures and Dislocations, p. 804.

VEGETABLE POWDER AS A LARVICIDE IN THE FIGHT AGAINST MOSQUITOES

A PRELIMINARY NOTE

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With the view to finding some larvicide cheaper than crude oil and just as effective, and at the same time available for use in certain places that can be neither oiled nor drained, such as water gardens, outdoor fish pools, rice fields and the like, I have experimented with many substances during the past few years. I have found not the perfect larvicide I sought, but one that meets at least a few of the requirements of perfection, and that I consider well worth a trial by those engaged in the work of exterminating mosquitoes. While not a substitute of oil under all conditions, it is certainly much cheaper than oil, as easy of application and, in most cases, as effective as oil, and it can be used in places where oil would not serve the purpose.

The larvicide in question consists of various vegetable powders, including the familiar pyrethrum or insect powder of the stores. In fact, all my earlier work was done with the pyrethrum powder, which gave excellent results. But it was so expensive that, had it been generally used and recommended for this work, the cost would have become prohibitive within a short time. So I determined to find some similar powder possessing the good qualities of pyrethrum, and at the same time being available to every one, and not subject to the speculative manipulations of the market.

As the larvicidal action of pyrethrum powder is purely mechanical, I considered it possible to produce a powder from the common weeds of the neighborhood that would be just as effective, and, indeed, I have found this to be the case. The weeds and grasses of nearly every species in the neighborhood, when dried and reduced to powder of the proper fineness, gave very good results, and it is not at all necessary to select any particular species in order to produce an effective powder.

A good powder should spread quickly and evenly over the surface of water even if thrown on by the handful, pushing the resulting film to all parts of the surface to be treated.

It is, however, much more potent when applied in the form of a spray over the entire area of the larger pools. The covering capacity should be from 3,500 to more than 4,000 square feet per pound of powder.

Perhaps the greatest disadvantage in the use of the powder is its short period of effectiveness—probably only a few minutes—but it is so deadly that, once the larvae come in contact with it, they die in a few minutes, even when immediately removed to another receptacle. The powder loses its effectiveness as soon as it is thoroughly wet.

I have found it very effective for killing such well known species as *Anopheles quadrimaculatus, Culex quinquefasciatus, Culex abominator, Aedes coclumbiae* and *Psorophora cyanescens.* Of these the species with short, thick air tubes such as *Anopheles, Aedes* and *Psorophora* are easily killed, while the species of *Culex* with very long, slender tubes are more resistant, *Culex abominator* being the most resistant species I have had to deal with.

These studies have been made in connection with the work of this bureau on the relation of mosquitoes and malaria to agriculture, under the general supervision of Dr. W. D. Hunter, with Mr. D. L. VanDine in charge of the field work.

PROGRESSIVE MUSCULAR DYSTROPHY*

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The tendency to enlarge on the functional rather than on the structural aspect of the so-called chronic and incurable diseases, and the tendency to consider them less as anatomic, and more as physiologic problems, as a result of the rapid advance of chemical physiology, has resulted in an auspicious change in point of view regarding the nature of disease, the purpose of diagnosis, and the object of treatment. From the new point of view, a diseased organ is one that is functionally unequal to its tasks. Determination of the structural nature and extent of organic defect is, accordingly, only partial, qualitative, anatomic diagnosis, which must be completed by quantitative, physiologic diagnosis, that is to say, measurement of functional capacity. Guided by such measurements, the therapeutist diminishes burdens and augments working powers in an endeavor to balance tasks and capacities.

The most striking feature of this physiologic concept of disease is its usefulness. With functional integrity as our goal, unattainable structural integrity is no longer a therapeutic "no thoroughfare."[1] As a concrete example, let us consider progressive muscular dystrophy.[2]

In progressive muscular dystrophy, we find low blood sugar, and, following treatment which increases the blood sugar, an improvement in muscular strength.[3]

Blood sugar — glucose — is the source of energy for muscular contraction. Active muscle rapidly uses up glucose. As the supply becomes exhausted, muscular strength diminishes and can be restored only by glucose. Agencies such as Addison's disease, diphtheria toxin, and phosphorus and hydrazin poisoning, which reduce the blood sugar, cause profound myasthenia, the severity of which is proportional to the fall in blood sugar. Hypoglycemia, then, sufficiently accounts for the myosthenia, the most striking symptom of progressive muscular dystrophy.

As the glucose of the blood is used up by the muscles, the loss is rapidly and quantitatively made good from the store of glycogen in the liver, the blood sugar being thereby maintained at a fixed level. Hypoglycemia can result only from a failure of replenishment to keep pace with the needs, that is, from a loss of balance between supply and demand.[4] Greater needs, such as increased utilization of sugar, or loss through the kidneys, can be ruled out in progressive muscular dystrophy. There is no rise in heat formation such as would accompany increased sugar catabolism, and the urine is free from sugar. A rapid fall in blood sugar during the first twenty-four hours of starvation — in health, the normal blood sugar level is maintained during starvation — testifies that in progressive muscular dystrophy, as in all forms of experimental hypoglycemia, there is a decreased rate of replenishment resulting from a diminished reserve of glycogen.

The diminished glycogen reserve in experimental hypoglycemia results from impaired glycogen formation. The carbohydrate ingested is not converted into glycogen, but remains a long time in the blood, after which, judging from the amount of "fatty degeneration" in these cases, and from the increased respiratory quotient, and the lipemia, it is probably changed to fat. This supposition is in accord with the well known antagonism between fat storage and glycogen storage. The deposition of fat in the muscles[5] points to a similar impairment of glycogenesis in progressive muscular dystrophy.

Impaired glycogenesis may result from damage either to the liver, the organ in which glycogenesis takes place, or to the suprarenals,[6] the organs that control the process. If the fault is with the suprarenals, administration of epinephrin restores normal glycogenesis. If the fault is with the liver, epinephrin has no effect. A prompt and marked rise in blood sugar following the administration of epinephrin in progressive muscular dystrophy testifies to the efficiency of the liver in this disease and points to a deficiency in epinephrin.[6]

SUMMARY

The myasthenia of progressive muscular dystrophy is due to hypoglycemia, and the hypoglycemia and fat deposition to impaired glycogenesis, the carbohydrate of the food being probably changed largely to fat instead of to glycogen. The impaired glycogenesis is due to suprarenal or other endocrine disease.

Parker Hill Avenue.

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* From the Robert B. Brigham Hospital.

1. For fuller discussion of the physiologic concept of disease see: McCrudden, F. H.: The Treatment of Chronic Disease as a Problem of Applied Physiology, Boston Med. and Surg. Jour., 1916, **175**, 57; The Teaching of Applied Therapeutics as a Branch of Applied Physiology, ibid., p. 93; Scientific Research in Chronic Medicine from the Physiological Point of View, ibid., p. 129.

2. For fuller discussion with original data see: McCrudden, F. H., and Sargent, C. S.: Hypoglycemia and Progressive Muscular Dystrophy, Arch. Int. Med., April, 1916, p. 465; Chemical Changes in the Blood and Urine in Progressive Muscular Dystrophy, Progressive Muscular Atrophy and the Normal, ibid., February, 1918, p. 252. McCrudden, F. H.: The Nature of the Pathological Process in Progressive Muscular Dystrophy, ibid., February, 1918, **21**, 256. Janney, N. W.; Goodhart, S. P., and Isaacson, V. I.: The Endocrine Origin of Muscular Dystrophy, ibid., p. 188.

3. Independent evidence of abnormal carbohydrate metabolism in this disease is shown in the low cholesterin content of the blood which rises with clinical improvement, and in the presence of creatinuria, a condition not known to occur in the urine of men except as an accompaniment of some disturbance of carbohydrate metabolism, which diminishes with clinical improvement.

4. Or "tasks and capacities." See introductory paragraphs.

5. So marked in some cases that the term pseudohypertrophic is applied.

6. Or other endocrine glands.

Hygienic Sinners.—The employer who does not supply adequate sanitary facilities for his help; the janitor or porter who dry sweeps the floor.—*Public Health.*

THE IMMEDIATE OPERATION FOR PERINEAL LACERATIONS

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NEW YORK

The literature embracing the study of the repair of the lacerated perineum is so extensive that an apology appears necessary for the introduction of a new discussion on such a time-worn subject; and yet, in spite of the attempts at operation immediately following the conclusion of labor, the great number of women who suffer from unrepaired tears bear evidence to the fact that the last word has not been said on the immediate repair of the perineum.

Investigation into this condition, in a service comprising a large number of obstetric cases, convinced me that fully 75 per cent. of those who have undergone the immediate suturing at the vaginal orifice are in need of a secondary operation. In view of the fact that much more than 50 per cent. of all primiparas are lacerated at the time of their confinement, it is safe to say that something is wrong with the technic generally employed. Surely no harm can result from a further study of the causes of such a

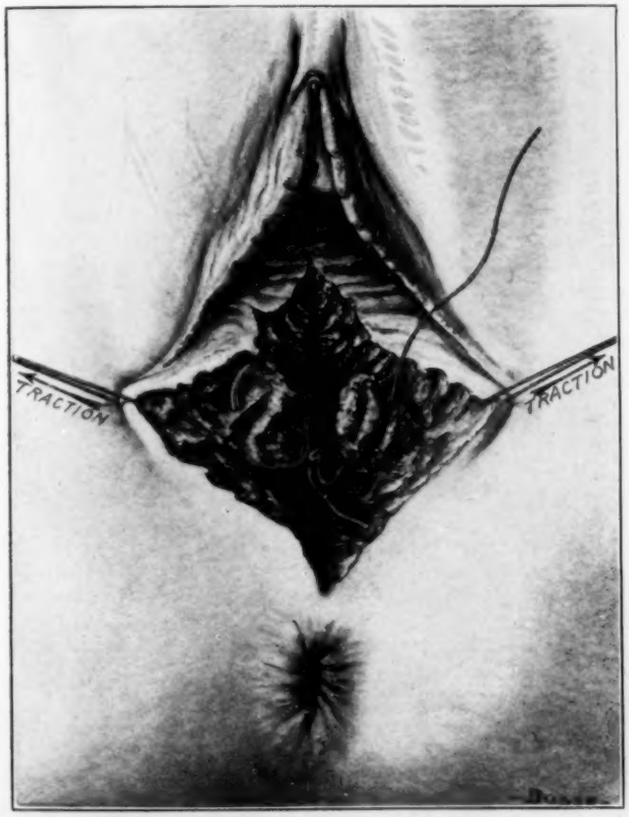

Fig. 1.—Edges of wound held apart by traction sutures, and sutures inserted into torn muscles.

deplorable state of affairs, or an effort to find a remedy for its correction. An unhealed or improperly repaired laceration of any part of the birth canal is always a reflection on the ability of the obstetrician, no matter what the cause.

Dissection of the perineum will show that all muscles that are inserted into the central point of this organ arise directly or indirectly from the pubes, the ischium, the sacrum or the coccyx, so that when rupture of the perineum occurs, contractions take place in all directions away from the point of insertion, and distortion of the parts is in direct ratio to the extent and various irregularities of the tears. An intact

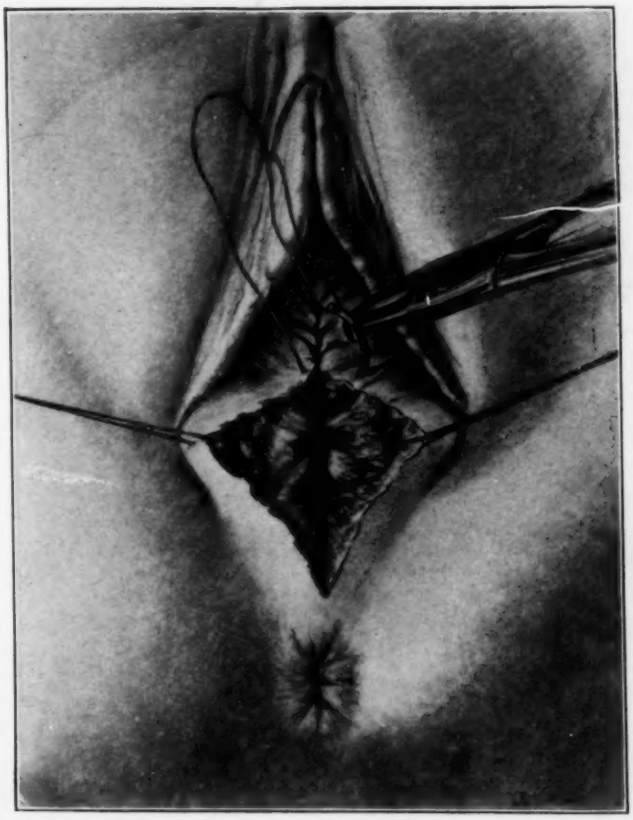

Fig. 2.—Torn ends of muscles joined, and laceration in vaginal mucous membrane partly sutured.

perineum regulates the contractions of the individual muscles attached to it, and controls and equalizes the tension that these muscles may exert on neighboring organs, such as the anus, the rectum, the bladder, the vagina and the uterus. Even the diaphragm may be acted on under certain conditions.

Immediately following labor there always is present some paresis of the perineal muscles, as a result of pressure; and where lacerations have occurred, gaping of the parts begins as soon as the muscles have regained their tone. The gaping accounts for the fact that no lacerated perineum unaided and of its own accord ever can be restored to its original intact condition; and unless the tissues are properly approximated, the distortion is increased rather than diminished.

A review of the literature on this subject reveals that very few authors advise any exact operative procedure; nearly all consider that a few sutures more or less deeply placed from the outer side, so as to include as much as possible of the torn tissues, are sufficient for the purpose. This practice cannot yield a satisfactory result. The torn ends of muscles may be overlapped and are more often not caught up at all, thus leaving a space beneath the surface due to muscular contraction and deficiency, which weakens the natural support and encourages prolapse of other organs.

Again, the surface alone may be approximated, leaving a deep hole in the vagina behind the perineum for the collection of blood and lochial discharges, and making a good culture medium for the generation of infective bacteria. In the majority of cases thus treated that have escaped infection, an examination

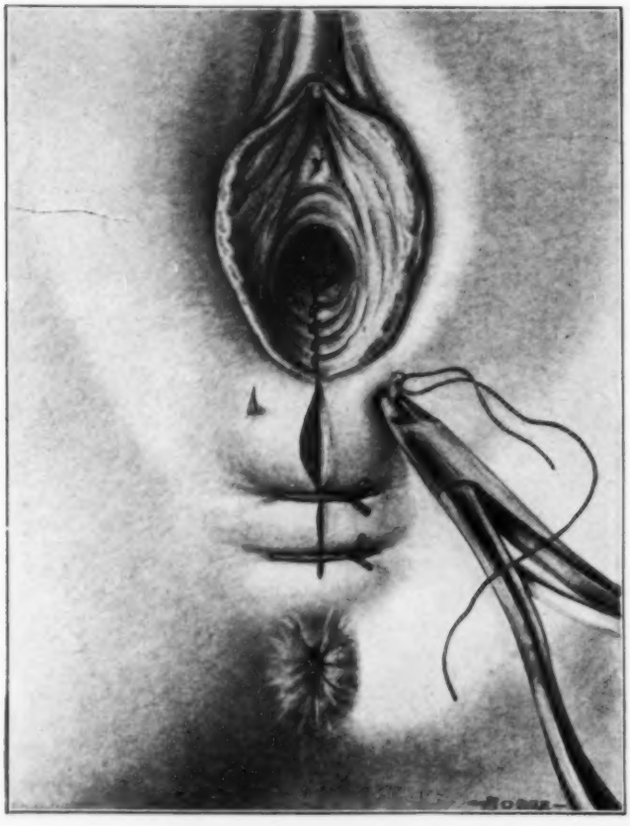

Fig. 3.—Operation completed.

after healing of the wound will reveal a thin layer of skin and mucous membrane taking the place of the perineal body.

In the repair of any ordinary wound, tissues of varying nature are brought together separately, and attempts are made to have as nearly as possible a normal alinement of the cut surfaces. To suture an ordinary wound without any regard to orderly rearrangement would be condemned by the veriest tyro in surgery.

The application of tenacula, to draw the different parts of the tear into correct position before starting, has been the first principle in all operations for secondary repair of the perineum, since the time of Hegar; but why this very important step is always neglected in the primary operation is not apparent.

TECHNIC OF THE OPERATION

The mucocutaneous edge of the wound at each side of the tear, where it enters the vagina, is caught up with a guide and traction suture. The operator or assistant, with regulated tension on these sutures, holds the wound open for inspection. The labia are widely separated, the wound is cleansed, bleeding points are controlled, and the torn edges of the muscles, which are generally represented by depressions in the side walls of the wound, are brought out with tenacula or temporary sutures, and joined with chromic catgut, and the number of interrupted sutures are made according to the requirements of the case. Before the muscles are brought together, the cervix may be exposed for inspection and repair.

After the muscles have been replaced, if the wound is deep, slack may be taken up in the connective tissue by one or two buried catgut sutures. With the guide sutures held in position for repair, the edges of the vaginal mucous membrane are now joined with a continuous chromic gut suture, and the outer side of the perineum is repaired with three or four silkworm-gut sutures deeply and widely inserted.

In complete tears, the rectal mucous membrane must be approximated first. The torn ends of the sphincter muscle are then brought out of the wound and firmly secured together, and the operation is completed as above.

It is important in complete tears that a rectal tube be inserted about 4 inches into the rectum, and retained there about four days. The bowels should not be moved during this time, and all discharges escaping through the tube should carefully be kept away from the wound, and the perineum should be disturbed as little as is compatible with careful cleanliness.

With the exception of third degree lacerations, I have seldom found it necessary to administer an anesthetic, though it is perfectly permissible to do so, especially if the patient is nervous or hard to control.

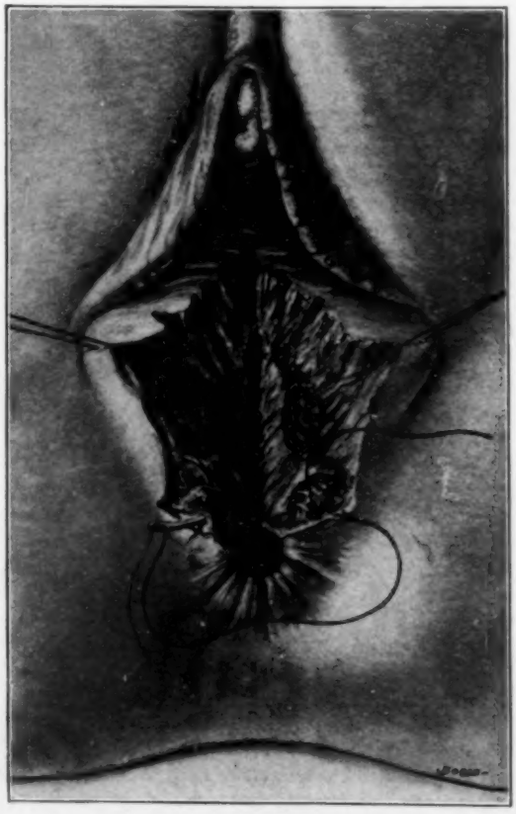

Fig. 4.—Rectal mucous membrane sutured, and suture inserted into torn edges of sphincter ani.

The method needs no special experience, and I believe that its simplicity of application is sufficient to recommend it. I would again call attention to the guide or traction sutures, which control the success of the operation.

139 West One Hundred and Nineteenth Street.

Clinical Notes, Suggestions, and New Instruments

A RAPID MACROSCOPIC AGGLUTINATION TEST FOR BLOOD GROUPS, AND ITS VALUE IN TESTING DONORS FOR TRANSFUSION

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Our knowledge of the four blood groups described by Moss[1] has proved to have a very practical value in blood transfusion. Hemolysis due to isohemolysis does not take place when the bloods of individuals of the same blood group are mixed in vivo or in vitro. It practically never occurs significantly in vivo when the donor belongs to a group whose red cells are not affected by the patient's serum in vitro, though the patient's cells in vitro may be acted on by the donor's serum. When the group has been determined, it is possible to select a donor whose blood is compatible as regards hemolysis with the blood of the recipient. Moss,[1] Minot,[2] Brem[3] and others have described practical microscopic tests for the determination of the blood groups. For the past two years, I have used a macroscopic test which is simple and rapid and sufficiently accurate for practical purposes. A brief review of some essential points will make clear the method and use of this test.

RELATION OF THE FOUR BLOOD GROUPS

		SERUM				
	Group:	I	II	III	IV	
CORPUSCLES	I	0	+	+	+	I
	II	0	0	+	+	II
	III	0	+	0	+	III
	IV	0	0	0	0	IV
		I	II	III	IV	

Every human being belongs to one of four blood groups. This grouping is based on the agglutinating activity of human serum and the susceptibility of red corpuscles of agglutination. The four groups formed on this basis are thus described:

Group I: Serum agglutinates no corpuscles. Corpuscles agglutinated by serums of Groups II, III and IV.

Group II: Serum agglutinates corpuscles of Groups I and III. Corpuscles agglutinated by serums of Groups III and IV.

Group III: Serum agglutinates corpuscles of Groups I and II. Corpuscles agglutinated by serums of Groups II and IV.

Group IV: Serum agglutinates corpuscles of Groups I, II and III. Corpuscles agglutinated by no serum.

There is no agglutination between serum and corpuscles of the same group.

The frequency of the four groups is, approximately: Group I, 5 per cent.; Group II, 40 per cent.; Group III, 10 per cent.; Group IV, 45 per cent.

1. Moss, W. L.: Bull. Johns Hopkins Hospital, 1910, **21**, 63; 1911, **22**, 238; A Simplified Method for Determining the Iso-Agglutinin Group in the Selection of Donors for Blood Transfusion, THE JOURNAL A. M. A., June 23, 1917, p. 1905.
2. Minot, G. R.: Boston Med. and Surg. Jour., 1916, **174**, 667.
3. Brem, W. V.: Blood Transfusion, THE JOURNAL A. M. A., July 15, 1916, p. 190.

The accompanying table shows the relation of the four blood groups (+ indicating that agglutination occurs, and 0 that no agglutination occurs).

The four blood groups are based on the agglutination reaction, but they also bear a definite relation to the action of hemolysins. The occurrence and reactions of the agglutinins do not vary. For example, they are always absent in Group I and always present in Group II; and Group II agglutinins always agglutinate corpuscles of Groups I and III.

As to the hemolysins, their reactions are constant in the groups which contain hemolysins, but their presence varies with the individual. For example, they are absent in Group I and may be present in Group III. Group III hemolysins always hemolyze corpuscles of Groups I and II, but Group III serum does not always give this reaction because the hemolysins are not found in the blood of every Group III individual. The hemolysins are present in only about 25 per cent. of all individuals. When present, the activity of the hemolysins follows the law that governs the activity of the agglutinins. For this reason the possibility of the presence or absence of the hemolysins may be deduced from the agglutination test.

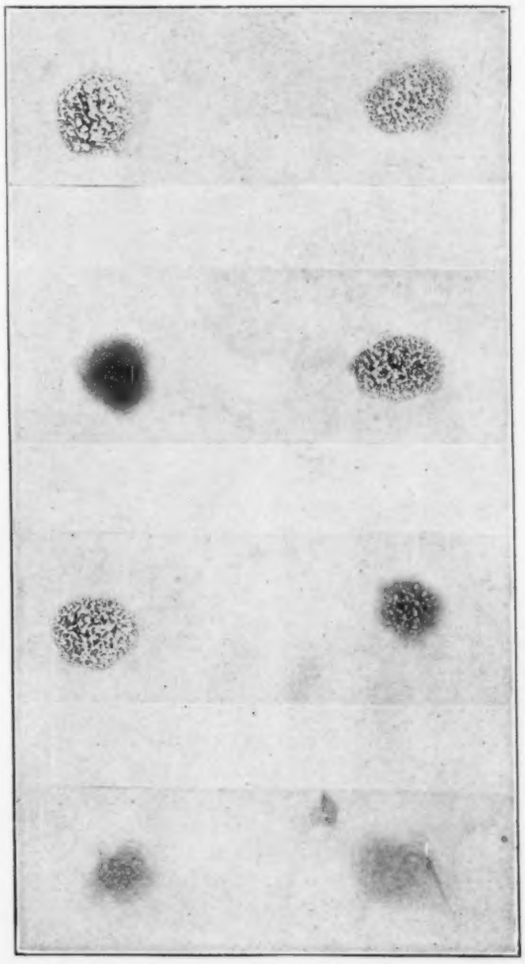


Fig. 1.—Group II serum is on the left-hand part of the glass slides, while Group III serum is on the right. Blood from each of the four different groups has been mixed with both II and III serums. The top slide shows the agglutination of Group I cells by both Group II and Group III serums. The second slide shows agglutination of Group II cells by Group III serum, but not with II serum. The third slide shows agglutination of Group III cells by II serum, but not with III serum. The bottom slide shows no agglutination of Group IV cells with either Group II or Group III serum.

Moss showed that the blood group to which an individual belonged could be determined by an agglutination test with his red blood corpuscles and the serums from individuals known to belong to groups II and III, or with suspensions of Group II and Group III red blood corpuscles and the

individual's serum. All tests in use at present are based on this observation.

The macroscopic test described in this paper is made by means of two citrated serums, Serum II and Serum III, obtained from the blood of two individuals belonging to Group II and Group III.

To prepare the serums, 20 c.c. of blood are collected from each individual under sterile conditions. When the blood has coagulated and the clot has contracted, the serum is pipetted off into two sterile flasks, and sufficient sodium citrate is added to obtain a citrated serum 1.5 per cent., and some preservative, as tricresol, 0.25 per cent. The serum is citrated to prevent the coagulation of the small amount of fresh blood mixed with the serum in making the test, which would make it difficult to determine the presence or absence of agglutination. A preservative is used because it is desirable to keep

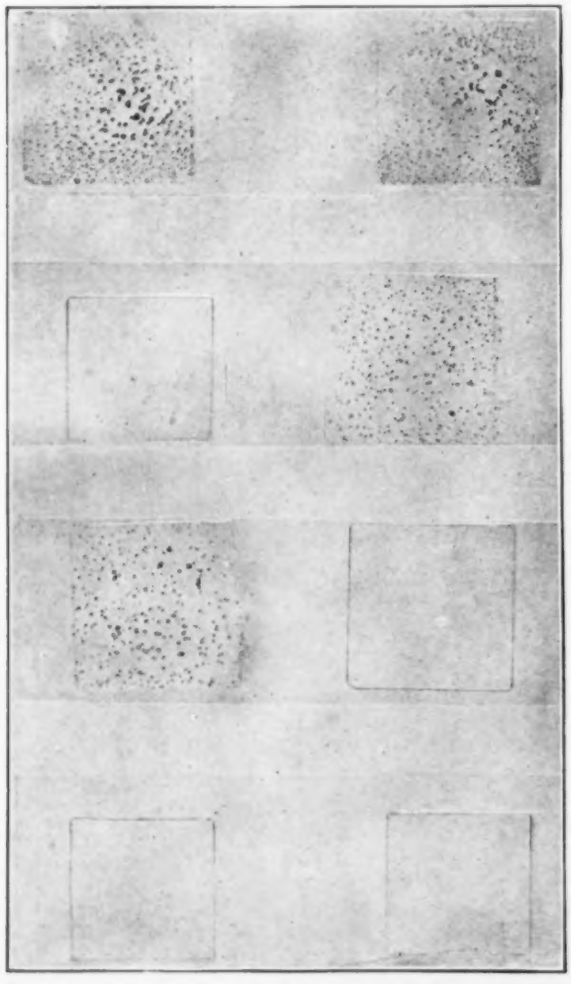


Fig. 2.—This shows the same results as in Figure 1 except that a cover glass has been superimposed on the mixtures of known serums II and III and the blood of the different groups.

the serum sterile, although I have observed, as have others, no apparent diminution in the activity of serum one year old which showed a moderate degree of contamination.

The serums may be kept for use in sealed small glass tubes or in bottles stopped with a combination rubber cork and medicine dropper.

The two prepared serums and a clean dry glass slide are needed to make the test. One or two drops of Serum II is placed on the left half of the slide, and an equal amount of Serum III on the right half of the slide. The ear or finger of the person tested is punctured, and a small drop of blood is transferred on the point of a knife blade to each of the serums in turn. The blood is stirred into the serum. The blood should be transferred before coagulation has commenced, and care should be taken to avoid mixing the two serums. Agglutination of the corpuscles is accelerated if the serum it agitated by the slide's being tipped from side to side. If the reaction is negative, the corpuscles make a uniform suspension in the serum. If the reaction is positive, the masses of agglutinated cells usually appear in less than a minute and are readily discernible to the naked eye. With certain serums, rouleaux formation of the red corpuscles takes place and is sometimes confusing. Rouleaux formation usually appears more slowly than agglutination, and the rouleaux are broken up if the serum is disturbed, while agglutination is increased by this procedure. In doubtful cases, the reading should be confirmed by microscope examination.

Study of the photographic reproductions shows the method of reading the tests. Figure 1 shows the macroscopic appearance of the known serums mixed with the blood of the different groups (the preparations have dried slightly). Figure 2 shows the same combinations of serums and blood, on which a cover glass has been superimposed after the agglutination of the red cells became evident. If the reaction is negative with both Serum II and Serum III, that is, a persistence of a uniform suspension of corpuscles, it indicates a Group IV blood. If the reaction is positive with both serums, that is, agglutination of the corpuscles, it indicates a Group I blood. If negative with Serum II and positive with Serum III, it indicates a Group II; and if positive with Serum II and negative with Serum III, it indicates a Group III blood.

It will be observed that these four different combinations of reactions conform to the two middle columns (between the heavy lines) in the table. If a slide is superimposed on its proper row in these columns, the group number of the corpuscles at the end of the row corresponds to the blood group of the individual tested.

Except in cases in which the risk of delay is greater than the risk of hemolysis, the compatibility of the blood of donor and recipient should be determined before blood transfusions are performed. While the compatibility of donor and recipient may be ascertained by testing the different serums and corpuscles in each instance against each other, this end is reached much more quickly and more easily if the blood groups of the individuals are known. Hemolysis of the red corpuscles does not take place between members of the same group. Therefore, when possible, it is preferable that donor and recipient should belong to the same group. Recent clinical experience apparently has confirmed the fact that certain definite combinations of different groups can be made without danger of hemolysis. Under certain conditions the red cells are protected by the antihemolysins, the absorption of agglutinins by the red cells and other factors which need not be explained at this time. Suffice it to say that members of Group IV may be used as donors for individuals belonging to Groups I, II and III, and that a Group I recipient may be transfused from individuals belonging to Groups II, III and IV. Members of Group IV, therefore, are termed universal donors, and members of Group I, universal recipients.

The selection of donors by blood groups is made as follows:

A Group I recipient may be transfused from any group.

Group II and III recipients may be transfused from the same group or Group IV.

A Group IV recipient requires the same group.

CONCLUSIONS

From the foregoing it is evident that the agglutination tests to determine blood groups have a very practical application in blood transfusion.

The macroscopic test is especially valuable because it is simple, rapid, and sufficiently accurate for practical purposes.

Girls and Khaki.—The social hygiene problem created by this war is not a problem of commercialized prostitution. Segregated districts, disorderly houses and professional women have been very largely removed from the cities and towns near our training camps. It is a problem of the individual soldier and the individual girl—the man cut away from his ordinary amusements and social life, the girl responding to the unusual and romantic glamour of the uniform.—Winthrop D. Lane, the *Survey*.

A MODIFICATION OF THE MOSS METHOD OF DETERMINING ISOHEMAGGLUTINATION GROUPS *

A. H. SANFORD, M.D., ROCHESTER, MINN.

It is well known that the iso-agglutinins in human serum are thermostabile, and it occurred to me that agglutinating properties in human serum might be easily preserved by drying. The experiment was made as follows to determine this point: Cover slips were cleaned and dried. On several of these were placed two loopfuls of serum from persons of Group III. In like manner cover slips were prepared, with serum from Group II persons. These droplets of serum were allowed to dry in the air, and were then wrapped in paper and placed in the ice box. After more than two months they still possessed marked agglutinating properties. To demonstrate this, one loopful of corpuscle suspension of a Group II person was used to dissolve the dried Group III serum on one of the cover slips. When this was inverted over the concavity on a hanging drop slide, it was noted that agglutination of the cells occurred almost immediately, as in the Brem method.[1] When the corpuscle suspension of the same group as the serum was used to dissolve the dried material on the cover slip, no agglutination occurred. Since we are asked from time to time to send known serums to laboratory workers who contemplate using either the Moss[2] or the Brem method for determining groups in the selection of donors for transfusions, it would seem that this method of using dried serum could well be employed in two ways:

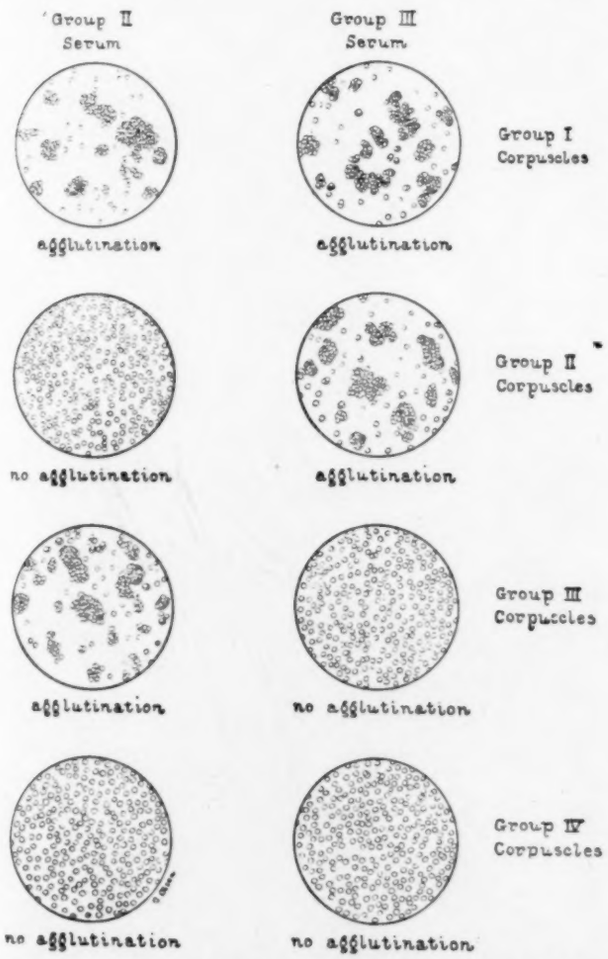


Fig. 1.—Appearance of hanging drop preparations of corpuscle suspensions of four different groups (Moss classification) used to dissolve Group II and Group III serum dried on cover slips.

1. The group in which a patient belongs might be determined by preparing several cover slips with serum of the person to be tested. These could be sent to a laboratory equipped to make the necessary tests, and by dissolving the dried serum with corpuscle suspension of a known group the patient's group would be readily determined. The technic is to dissolve the serum on one cover slip with one or two loopfuls of suspension of Group II corpuscles made by allowing two or three drops of blood from a Group II person to fall into 1 c.c. of 2 per cent. sodium citrate solution. Another cover slip preparation may be made by dissolving the serum from a loopful of Group III corpuscle suspension. Hanging drop preparations are then made and examined under the microscope. Agglutination of corpuscles on both slides places the unknown serum in Group IV. No agglutination after ten minutes on either slide places the unknown serum in Group I. Agglutination of the Group III corpuscles and no agglutination of the Group II corpuscles places the unknown in Group II, and agglutination of the Group II corpuscles and no agglutination of the Group III corpuscles places the unknown in the reciprocal Group III.

2. This method may be used very well by laboratory workers who desire to start grouping unknown blood and who must have known serum for beginning these tests. The technic is to collect from the unknown person a few drops of blood in 1 c.c. of 2 per cent. sodium citrate solution to make a corpuscle suspension similar to the method described by Brem. One or two loopfuls of unknown corpuscle suspension is used to dissolve the Group II serum dried on the cover slip marked known Group II serum. In like manner a drop of the corpuscle suspension is used to dissolve the dried Group III serum. Hanging drop preparations are made and examined in the usual manner. Agglutination on both of the slides will place the unknown blood in Group I. No agglutination on either of the slides after ten minutes will place the person in Group IV. Agglutination of the unknown corpuscles with Group III serum and not with Group II will place the unknown in Group II and vice versa. Group III blood is demonstrated by agglutination with the Group II serum and no agglutination on the other side. Reference to the diagram for the relation of the agglutination groups to each other (Fig. 2) may be helpful in following the technic of this test.

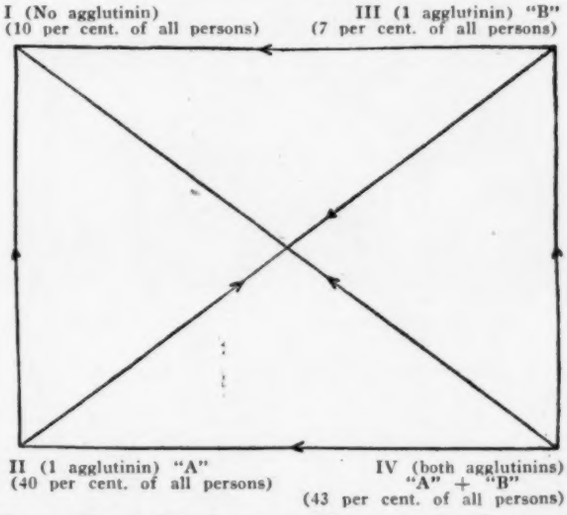

I (No agglutinin)
(10 per cent. of all persons)
III (1 agglutinin) "B"
(7 per cent. of all persons)
II (1 agglutinin) "A"
(40 per cent. of all persons)
IV (both agglutinins)
"A" + "B"
(43 per cent. of all persons)

Fig. 2.—Moss agglutination groups: The corpuscles of the various groups are agglutinated by the serums of the groups from which the arrows lead.

I am prepared to send serums to laboratory workers interested in the determination of iso-agglutination in connection with the selection of donors for transfusion.[3]

* From the Mayo Clinic.

1. Brem, W. V.: Blood Transfusion, with Special Reference to Group Tests, THE JOURNAL A. M. A., July 15, 1916, pp. 190-193.

2. Moss, W. L.: Studies on Iso-Agglutinins and Iso-Hemolysins, Bull. Johns Hopkins Hosp., 1910, **21**, 63-70; A Simplified Method for Determining the Iso-Agglutinin Group in the Selection of Donors for Blood-Transfusion, THE JOURNAL A. M. A., June 23, 1917, pp. 1905-1906.

3. In addition to the references already given, the following will be found of interest:
Sanford, A. H.: Selection of the Donor for Transfusion, Journal-Lancet, 1917, **37**, 698-701; Iso-Agglutination Groups: A Diagram Showing Their Interrelation, THE JOURNAL A. M. A., Sept. 9, 1916, pp. 808-809.

PNEUMOPERICARDIUM FOLLOWING PARACENTESIS: REPORT OF A CASE

CHARLES E. STEWART, M.D., BATTLE CREEK, MICH.

History.—R. J. B., man, aged 39, evangelist, was admitted to the sanatorium, May 2, 1916, complaining of pain in the right side, dyspnea and progressive weakness. His father

Fig. 1.—Condition of chest on patient's arrival.

died at 60 from the grip, his mother at 47 from malaria. One maternal aunt died from pulmonary tuberculosis. His wife and four children were in good health. In early childhood he had intermittent fever, and frequent attacks of colic and diarrhea.

Six years before admission, his health began to fail. At that time he had a persistent cough, and on examination pulmonary tuberculosis was suspected and he went west, where he gradually regained his health. Later he returned to his home in Texas, where he resumed his work. He continued in apparently good health until three years before, when he had an attack of acute appendicitis, and the appendix was removed. At the time of operation, numerous adhesions were found about the intestine.

A few months later he had a severe attack of pain in the right upper abdominal quadrant. This was accompanied by fever and lasted twenty days. After this he was free from pain for several months. During September, 1915, the pain returned again, but was not quite as severe as during the former attack, but had continued ever since.

He complained of tenderness along the margin of the right costal arch and the hepatic area. He described this as being very sore, with a dull ache. He had coughed a great deal during the past four months, and breathing was jerky and difficult. He had expectorated very little, appetite and digestion were good, but eating produced discomfort in the right upper quadrant and greatly increased his dyspnea. He complained of weakness and pronounced dyspnea on slight exertion. During December, 1915, he fainted twice. He had chewed a great deal of tobacco, having used it continuously for thirty years.

Physical Examination.—The temperature was 98.2, the pulse 126, small and weak. The patient's frame was of medium size. Nutrition was subnormal. The musculature was small and flabby. The skin generally was dark. There was some cyanosis about the face and the fingers. The neck vessels were engorged. There was a scar over McBurney's point. The pupils were wide. The tongue was heavily coated. The chest was small; expansion was limited; respirations were rapid and shallow; there was an expiratory grunt. Breathing was labored and less rapid when the patient was sitting or standing than when lying down. There was dulness over the left apex anteriorly and posteriorly. Crepitant râles were heard over the entire pulmonary area anteriorly and posteriorly, and were most pronounced anteriorly. Bronchial breathing was heard over both sides.

On percussion a large area of cardiac dulness was encountered, extending from the fifth interspace on the left side of the thorax in the anterior axillary line to the midclavicular line in the fifth interspace on the right, gradually diminishing in breadth in an upward direction until the area of the great vessels was reached, where the breadth of dulness was a little wider than normal. The area of dulness was triangular, with the base downward about two thirds to the left and one third to the right of the sternum. When the patient lay on the right side, the area of dulness shifted about 2 cm. to the right. The cardiohepatic angle, instead of being an acute one, as in the normal, was quite obtuse. On auscultation over the precordia, no adventitious sounds were heard; the heart sounds were all quite distinct. Palpation was negative, no cardiac impulse being felt.

The contour of the abdomen was normal except for a slight bulging beneath the right costal arch, over which area there was tenderness most pronounced in the region of the gallbladder. The hepatic dulness extended to within an inch of the umbilicus. During expiratory movements the area of hepatic excursion was limited.

The urinary findings were negative except for the presence of a large quantity of indican. The blood was negative; the

Fig. 2.—Condition after paracentesis, at which time air entered the pericardial sac.

systolic blood pressure was 90, diastolic 64, pulse pressure 26. Examination of the sputum revealed the presence of tubercle bacilli. The electrocardiogram showed a right sided preponderance.

The large area of precordial dulness shifting on change of position, absence of cardiac impulse on palpation, the obtuse cardiohepatic angle, and the presence of extensive pulmonary

changes, together with the presence of tubercle bacilli in the sputum, led to a diagnosis of pericardial effusion of tuberculous origin.

A fluoroscopic examination revealed a tremendous heart, which reached within a thin finger's breadth of the left chest wall. The right border of the heart reached midway between the midline and the right chest wall. The shape of the heart

Fig. 3.—Condition after a second paracentesis, at which time no air entered.

was somewhat suggestive of a pericardial effusion, although the vigor of the pulsations of the cardiac shadow was against fluid. There was a moderate increase in the width of the aortic shadow, the increase being both upward and laterally. The left bronchus was pushed upward by the enlarged heart. The right diaphragm seemed normal. The left costophrenic angle was obliterated, apparently by a small amount of fluid.

In the right lung anteriorly there was degeneration of the subcutaneous tissue to the lower border of the fifth rib in the midclavicular line. Over the same area moist râles were obtained. There was moderate retraction of the apex. Posteriorly there was dulness from the apex to the upper border of the ninth rib close to the spine. There were moist râles as low as the upper border of the sixth rib. From here to the lower border of the eighth rib close to the spine the breathing was decidedly bronchial in character. There were emphysematous changes at the base.

In the left lung anteriorly there was dulness from the apex to the lower border of the second rib, with harsh inspiration and bronchial prolonged expiration. Between the second and third ribs the percussion note was more resonant although the râles continued to and around the cardiac dulness. From the third rib extending to the base the percussion note was more flat. The cardiac dulness extended around into the axillary area. There were some pleural crepitations at the base of the lung, where the roentgen ray suggested possible fluid. Posteriorly there was dulness to the lower border of the sixth rib, with bronchial prolonged expiration over the same area. Between the second and fourth ribs the breath sounds were decidedly bronchial in character and accompanied by râles. There were emphysematous changes at the base.

Summary.—There was a very marked enlargement of the heart, with some findings suggestive of pericardial effusion. Some changes throughout the lung could be caused by the venous congestion due to circulatory disturbances, but apart from this there had been an old tuberculous process in both lungs, which now showed signs of activity in the upper part of each lung, more particularly marked in the right.

Treatment and Course.—May 15, the patient was sent to the hospital for paracentesis of the pericardium. At this time an ordinary aspirating needle was inserted through the fifth interspace an inch to the outer side of the midaxillary line, and 22 ounces of fluid were withdrawn. During this procedure air was accidentally allowed to enter the pericardial sac so that it remained as much distended as it was prior to the removal of the fluid.

Figure 2 gives a beautiful illustration of this, showing the sac containing air and also the level of the remaining fluid. A fluoroscopic examination of the chest at this time revealed a very interesting condition: the distended pericardium with the heart inside of it, and the level of the fluid on the two sides of the heart shadow. The fluid level was in constant agitation, alternately rising and falling on either side of the heart as it changed its position and size during systole and diastole.

For a period of two weeks after the removal of the fluid the patient made rapid improvement. Shortly after this the pericardium rapidly filled with fluid again and the old symptoms of dyspnea, cough, cyanosis and tachycardia returned June 11, paracentesis was again performed, and 14 ⅓ ounces of fluid were removed but did not afford much relief. After a few days the patient rapidly grew worse, and he died about two weeks after the last fluid was withdrawn.

Figure 3, showing the heart after the fluid was removed the second time, shows that the pericardium on the right side was adherent to the diaphragm as far out as the midclavicular line, and this may account for the constant pain the patient experienced in the right upper quadrant.

GONOCOCCUS INFECTION OF THE MUCOUS MEMBRANE OF THE ORAL CAVITY

JOHN MILLS MAYHEW, M.D., LINCOLN, NEB.

History.—N., a student, aged 19, had always been in good health. He denied venereal disease or recent exposure of any kind. Jan. 2, 1918, the day before his departure from his home at Sheridan, Wyo., to attend a college in Massachusetts, he visited a dentist to have his teeth cleaned. He reported that the dentist was so rough that his mouth bled in several places after the treatment. Within twenty-four hours he had a great deal of pain and a burning sensation in the buccal portion of the lips, and within forty-eight

Fig. 1.—Infection of lower lip.

hours his throat was sore. Sixty hours after the treatment his lips were swollen and painful, and vesicles formed at the corners of the mouth. He could not swallow anything but the blandest of liquids, and even warm water hurt his throat severely. I saw him four days after the trouble began—five days from the time of infection. He complained of intense pain in the throat and under the tongue; he could hardly move his lips in speaking, they were so swollen.

Examination.—This was difficult, but inflammation of the entire buccal cavity was observed, hemorrhagic areas over

the right pillars and velum, and a white, clinging exudate over the left velum, cheeks, lower lip, dorsum of the tongue, and oropharynx. On the frenulum of the tongue there was a shallow ulcer with a red base resembling somewhat a mucous patch. The corners of the mouth were cracked and bleeding. The area under the exudate on the lips bled when the membrane was raised. The tongue was swollen, and showed an exudate on the dorsal surface. The whole picture presented a most severe type of mouth infection. The submaxillary glands were swollen and tender; the cervical chains were negative. The temperature was 100.2, the pulse, 110. The patient felt and looked very ill. Serum from the ulcer on the frenulum was examined with the dark field illuminator, and by means of India ink smears for the *Spirochaeta pallida*, but none were found. Specimens were taken from different parts of the mouth and were examined especially for Vincent's spirochete, the fusiform bacillus, and fungi. Smears made from the pus revealed gram-negative, biscuit-shaped diplococci, both intracellular and extracellular. A large number were crowded in some of the leukocytes, one containing fourteen pairs. This organism grew slowly on ascitic fluid, hydrocele and blood serum-glycerin-glucose-agar, and did not grow on the simple cultural mediums at 37 C. It was agglutinated by serum from a known gonorrheal blood. Complement fixation for gonorrhea was negative, but since this is usually the case in acute gonorrhea, I did not put much value on this test. It seemed to me, reasonable to believe that this organism was the gonococcus.

Fig. 2.—Exudate on upper and lower lip.

Treatment and Course.—The patient was sent to the hospital, isolated, and treated with a mouth wash of a saturated solution of thymol. The mouth and throat were swabbed twice daily with a 2 per cent. silver nitrate solution. The exudate increased rapidly, covering the roof of the mouth and the lips and evading the tonsils, but appearing on the pharynx by the morning of the following day, the eighth after infection. In forty-eight hours after treatment was instituted, the exudate began to disappear, leaving a raw, bleeding surface, the roof of the mouth clearing first, then the pharynx and lip surfaces in order. The ulcer on the frenulum was the last to heal. At no time was there any odor from the mouth or the secretions expectorated. Smears were negative for the intracellular diplococcus on the twelfth day, and none of the organisms described were found in culture; but the mouth was very sore and, in places, raw, and it bled on slight provocation. The parotids were not painful at any period of the disease, the cervical lymphatics were but slightly tender, and the joints were never disturbed. The nasopharynx mucous membrane and nasal cavities were not infected.

It is known that the gonococcus will attack any mucous surface, but it has been found rarely in the mouth. While this attack followed the supposed infection too closely to be an ordinary gonococcal infection, it seems to me that the only other organisms, the meningococcus and the *Micrococcus catarrhalis*, have been excluded as an etiologic factor.

REMOVAL OF THIRTY DENTICLES FROM ONE BICUSPID SOCKET

BUNDY ALLEN, M.D., IOWA CITY, IOWA
Roentgenologist, University Hospital, State University of Iowa, College of Medicine

May 29, 1917, a woman, aged 23, called my attention to a slight prominence of the gum buccally to the upper right bicuspid region which had not produced any symptoms other than the elevation of the tissue. Figure 1 is a roentgenogram of the upper right bicuspid region showing the presence of a collection of denticles. The patient was referred to Dr. John Voss of Iowa City, Iowa, who extracted thirty denticles from the first bicuspid socket (Fig. 2). All teeth were present, and occlusion was perfect, excepting for the third molars, which had not erupted.

Fig. 1.—Collection of denticles in upper right bicuspid region.

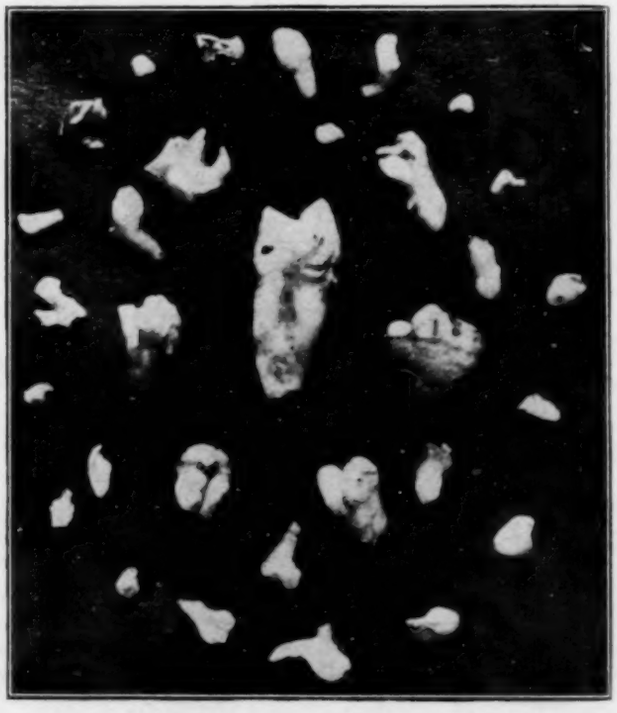


Fig. 2.—The thirty denticles removed from the bicuspid socket.

Child Labor Standards.—To secure ideal standards, national or local, we must presuppose ideal citizens, educated, alert, knowing what they want and organized to demand efficiency of their public servants.—Lindsay, *Child Labor Bulletin.*

HOW TO BREED MICE*

CONRAD HON, NEW YORK

In breeding mice, one should be sure to use strong, healthy animals. If the mice are obtained from an unknown stock, they should be isolated for two weeks, and if any of them become sick during this time they must be discarded. Unless this precaution is taken, an epidemic will devastate one's own stock.

At the time of mating, the female mice should be from 8 to 10 weeks old, and should weigh from 17 to 18 gm. The males should be from 8 to 10 weeks old, and should weigh at least 20 gm. The period of gestation of the mouse is about twenty-one days. The average litter is five, although some females give birth to as many as twelve. It is best not to put more than four females with one male. The males should not be used more than three or four months, while the females should be discarded after they have borne four or five litters.

There are two ways of breeding mice: the family group method and the individual method. In the former method, four females are kept in a box with one male. The advantages of this method are that not only is less labor and space required, but the females have a litter every thirty days. The disadvantage is that one of the females may be vicious and kill not only her own offspring, but all the other young mice in the box. In the individual method, four or five females are also placed with one male, but as the females become pregnant, they are put into separate boxes. The disadvantages of this method are that more time and space are required, and the gestation period is lengthened forty-five days. This method is preferred, as more and healthier mice can be raised.

The temperature of the breeding room should be kept between 68 and 70 F. The mice may be kept in wooden boxes or in glass battery jars with wire tops. A box measuring 11 inches long, 8 inches wide, and 5 inches deep is the most convenient. It is much easier to clean the wooden boxes if their bottom is lined with tin. The battery jars measure 6 inches in diameter and 8 inches in height. The bottom of each box or jar should be covered with sawdust or shavings to the depth of 1 inch. The sawdust or shavings should be changed at least twice a week. Both boxes and jars should be thoroughly cleaned with soap and water twice a week. If an infectious disease breaks out, the boxes and jars should be sterilized. When the mice become pregnant, a handful of fine hay or paper cut into strips is put into the boxes.

The young mice can usually be weaned in three weeks. In large litters, it is better to wean the stronger ones at the end of three weeks, and allow the weaklings to remain another week. As soon as the young are weaned, the females are returned to the males.

Mice should be fed twice a day. The morning meal should consist of moist food, such as bread soaked in skimmed milk. If skimmed milk cannot be obtained, boiled whole milk diluted with an equal quantity of water may be substituted. If milk is unattainable, bread should be soaked in water. An evening meal of grain is given, a mixture of wheat screenings and buckwheat, or buckwheat and oats, or oatmeal is used. Dog biscuit should be fed twice a week. The dog biscuit is not only highly nutritious, but keeps the mice from gnawing at the boxes.

The mice should be inspected daily. If a mouse shows evidence of disease, it should be immediately isolated, and if severely affected, it should be killed at once. There are two highly infectious diseases that affect mice. Mouse typhoid is easily recognized by the diarrhea that is present. The mouse appears sick, the fur is ruffled, the eyes bulge, and a peculiar odor is noticeable. There is another highly contagious condition of unknown origin which causes paralysis and definite swelling of one or more limbs. This condition causes death in about two days.

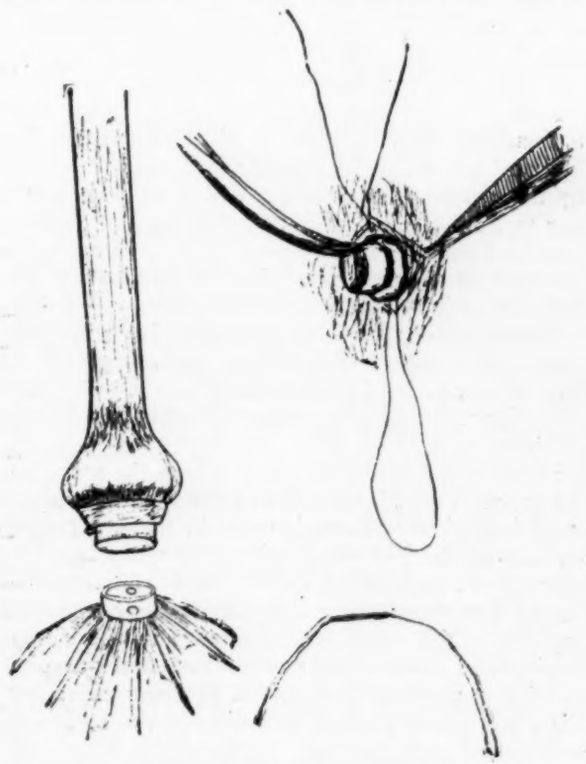
The three cardinal rules of a successful mouse breeder are cleanliness, close observation, and isolation.

* From the Rockefeller Institute for Medical Research, New York.

A NEW TECHNIC FOR BLADDER DRAINAGE

HARVEY P. JACK, M.D., HORNELL, N. Y.

This technic is an adaptation of the use of the Murphy button, similar to its use in enterostomy, as suggested by Dr. William D. Johnson of Batavia, N. Y. As will be noted, one half of the Murphy button is inserted into the end of a large rubber tube, the rubber end surrounding the button closely about its shank, just as the end of an intestine would be made to surround it by the purse-string in end-to-end anastomosis. The other half of the button, surrounded down to its shank by a soft rubber ring, if desired, so that it will not cut through too quickly, is placed inside the bladder through a small slit. The bladder tissues are brought firmly about the shank of this half of the button, and the two halves are pushed together as closely as desired. It will be noted at once that we have a perfect joint and that we may use our drain as little or as much as we please. If we are not satisfied that we are perfectly siphoning all of the bladder cavities, of which a strong point is made by Deaver,[1] we may readily introduce another and smaller tube, threading it



Appliance for drainage of bladder.

through the larger one down to the very bottom of the bladder. Forty-eight hours after this operation, which is performed under local anesthesia usually, quinin and urea hydrochlorid four-hour washings of the bladder are begun. If the patient desires to be up and about, an artery clamp is placed on the tube, and he is given the desired permission.

In the last ten cases of prostatectomy we have used this device with the utmost satisfaction. No leakage occurs, and at the end of the preoperative period the suprapubic wound in every case had healed by first intention.

The device has saved much suffering by its prevention of that justly dreaded bugbear of suprapubic wounds, infection of the space of Retzius.

Another advantage this technic presents over any of those recently suggested is that the incision in the bladder may be made of sufficient length to allow search for and removal of stones, which should always be done. At the same time a nonleakable joint is easily secured by a purse-string suture which brings the bladder tissue about the half of the button placed

1. Deaver, J. B.: Ann. Surg., 1917, **66**, 371.

in the bladder. This, of course, is the female half of the button.

I have never yet used the rubber ring suggested above. The button has always remained in the tissues without cutting for two weeks. Should it be desired to keep the button in place for a much longer period, the use of the ring is obvious.

Military Medicine and Surgery

TRAINING THE ENLISTED PERSONNEL OF A BASE HOSPITAL

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The scheme for organizing the first fifty base hospitals for the new United States Army by the Red Cross in conjunction with civil hospitals and medical schools, had for its primary object the suitable grouping of specialists. A less obvious result, but another important one, has been the selection for these units of a relatively high percentage of enlisted men with college and other special training. Instead of simplifying the process of training, which at first would appear to be the result of such selection, the problem has really been made more complicated. For, while the courses in nursing, first aid, etc., ordinarily prescribed for sanitary troops are quickly covered by men with these qualifications, such training is inadequate, for the reason that it falls short of preparing them as well as they can be for the special work of a base hospital. Our method of meeting this situation is here outlined.

The first step, which was taken before the mobilization of the unit, was, by means of a questionnaire and a personal interview with each man, to make a survey of the personnel. The result of this was expressed on a large chart, exhibiting, in parallel columns, the names of the men; their education; their previous employment; their previous experience in the Army, in hospitals, in commercial and professional pursuits, etc., and our personal impression of their character.

This survey was used as a basis for the assigning of men for special training. It showed a large percentage with college training, including a number of premedical and first year medical students, graduate students in protozoology, etc., and others with previous military training, mostly in schools.

Several months prior to mobilization, five men were assigned to active duty through request made to the department surgeon. These were selected as prospective noncommissioned officers. Several others volunteered during this time to serve as hospital helpers, and quite a number were able to attend an evening drill class.

Systematic training was not attempted, however, until the men were mobilized and under definite military control. Our organization, under command of Col. Elmer A. Dean, was fortunately situated in San Francisco at a point readily accessible to four large teaching hospitals, the Letterman General, Lane Hospital, the San Francisco Hospital, and the University of California Hospital, in all of which the utmost courtesy and helpfulness was encountered.

The men were at once divided into five detachments, one to remain in camp, which included the necessary camp help, and four to attend hospitals. Each hospital detachment was placed in charge of a medical officer for general oversight and instruction. Special pains were taken in these assignments, first, to limit the number of men in any one place to those who could actually be used as part of the hospital help; and, second, to fit into specially important places men capable of qualifying for them. For the latter purpose the tabulated survey of enlisted personnel was particularly useful. The following will serve as examples: Two medical students who had studied physiology were made apprentices to two different anesthetists, and after a sufficient period of instruction they were allowed to work under supervision and then to work entirely on their own responsibility. Another medical student in the same way has become a competent serologist, able independently to carry out the technic of complement fixation for syphilis, gonorrhea and tuberculosis, to test blood for transfusion, to do the more technical tests on spinal fluids and other similar work. Another group of men with previous experience as microscopists have learned to do the work of a routine clinical laboratory, including examination of the urine, feces, blood sputum, etc. Several have become valuable assistants in bacteriologic and pathologic laboratories. Soldiers also have been adequately developed as assistants in roentgenography, the genito-urinary room, the surgical clinic, the operating room, the sterilizing room, the diet kitchens, etc. In addition, a large number of men were used in medical and surgical wards as orderlies and nurses' helpers. Those assigned to the Letterman General (United States Army) Hospital were taught particularly Army ward management and paper work.

One or two general changes in assignments to hospital wards were made during our three months in camp, so that the majority of the men received more than one type of training; but this did not apply to the "special training" men (anesthetists, laboratory workers, and the like). *An essential part of the plan was to train these men intensively in one subject only.*

With most of the company thus scattered and their time so fully occupied, special measures were necessary to secure the desired proficiency in military drill. The plan adopted worked out even better than our hopes. Noncommissioned officers distributed so that two or three were with each hospital and camp detachment were charged with the responsibility to see that every man learned the drill. Their instruction was controlled and unified by means of weekly conferences. They were required to submit in tabular form the reports of the accomplishments of each man in such fundamentals as the position of the soldier, the facings, ability to maintain the 30 inch step, the half step and the proper marching cadence, and the movements of pivot men and guides.

Of considerable assistance in quickly mastering these movements was a series of full size diagrams painted on some neighboring and little used asphalt streets. These showed by lines the direction of march and by cross marks the steps taken by individuals in such fundamental evolutions as "Detachment Right," "Right Turn," "Fours Right About" and "Right by

Fours." Individuals and groups used these diagrams for practice at such odd hours as they could find until they could be marked proficient. With this foundation the company drill, which was held as a rule but once a week, succeeded in a very short time — much shorter, we believe, than is required by the usual methods of straight detachment drilling. We also believe that the results are better.

An important factor in the success of this drill teaching as well as of the training as a whole was competition for promotion. We were fortunate in having enlisted the men almost without exception as privates; and, while not overlooking educational qualifications, we early announced the policy of making promotions on the basis of demonstrated fitness. Only two or three experienced noncommissioned officers were drawn from the Regular Army. Those who assisted in the drill teaching, although they had had previous military instruction, received at first merely temporary appointments as lance corporals. Evening classes in Army regulations, clerical work, etc., were held for those who wished to attend in preparation for the examinations for noncommissioned officers.

SUMMARY

In training the enlisted personnel of an Army base hospital, the following have been found highly advantageous:

1. Situation of the camp near large teaching hospitals.
2. Initial survey of personnel to discover fitness for special work.
3. Under adequate supervision, assignment of individual men or very small groups to wards, laboratories and other stations for training. In no place in the hospital should more men be placed than can actually be put to work.
4. Nonrotation of men learning technical work.
5. Military drill instruction with expenditure of less time and more individual effort; organization of student teachers, supplemented by conferences, and use of marching diagrams.
6. Stimulation of competition for promotion on basis of fitness shown in work and in examinations.

The Plague of Scabies.—French dermatologists have been recently calling attention to the increasing prevalence of itch, and in his address on assuming office, the new president of the Lisbon Sociedade das Sciencias Medicas, Dr. Z. Falcão, mentioned also the plague of scabies. He stated that in his service last year at the S. José Hospital, 3,234 persons with scabies were given treatment, and the numbers are much higher this year. In one day recently there were forty-six cases, and cases are multiplying in his private practice. In infants, and exceptionally in adults, intercurrent scabies renders eczema or impetigo much graver and complications may prove fatal. Adults with visceral lesions suffer from the insomnia from the "mysterious itching," and serious consequences have been observed from the chilling of the body as it was exposed for scratching. The nervous may develop actual obsessions. Scabies lesions on the penis open the portals to infection, especially to virulent syphilis. Another distressing localization of the itch is in the areola of the mamma; this, he said, has been known to lead to suicide. He also related that the irritation of the skin from extensive scabies and from the various topical measures applied, may damage the kidneys. He has frequently noted edema in persons with itch.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

TYPHOID VACCINE (See N. N. R., 1918, p. 343).

The Gilliland Laboratories, Ambler, Pa.

Typhoid Vaccine.—Prepared according to the method of the U. S. Army Medical School Laboratory from the Rawling's strain. Marketed in packages containing three syringes, the first containing 500 million killed typhoid bacilli and the second and third containing each 1,000 million killed typhoid bacilli; in packages containing three ampules, the first containing 500 million killed typhoid bacilli and the second and third containing each 1,000 million killed typhoid bacilli; also in ampules containing from 5 to 100 Cc. of the vaccine as ordered.

VACCINE VIRUS (See N. N. R., 1918, p. 323).

The Gilliland Laboratories, Ambler, Pa.

Small-Pox Vaccine.—Marketed in sealed capillary tubes, in packages containing one, five and ten tubes each.

OLD TUBERCULIN (See N. N. R., 1918, p. 326).

The Gilliland Laboratories, Ambler, Pa.

Original Tuberculin, "O. T."—Marketed in 1 Cc. vials.

Tuberculin Ointment in Capsules (For the Moro Percutaneous Diagnostic Test).—An ointment consisting of tuberculin "Old" and anhydrous wool fat equal parts. Marketed in capsules sufficient for one test.

TUBERCULIN DENYS, B. F. (See N. N. R., 1918, p. 329).

The Gilliland Laboratories, Ambler, Pa.

Bouillon Filtrate Tuberculin, "B. F."—Marketed in 1 Cc. and 3 Cc. vials; preserved with 0.4 per cent trikresol.

NEW TUBERCULIN, B. E. (See N. N. R., 1918, p. 328).

The Gilliland Laboratories, Ambler, Pa.

Bacillen Emulsion Tuberculin, "B. E."—Marketed in 1 Cc. and 3 Cc. vials; preserved with 0.4 per cent. trikresol.

NEW TUBERCULIN, T. R. (See N. N. R., 1918, p. 328).

The Gilliland Laboratories, Ambler, Pa.

Tuberculin Residue, "T. R."—Marketed in 1 Cc. and 3 Cc. vials; preserved with 0.4 per cent. trikresol.

DETRE DIFFERENTIAL TEST (See N. N. R., 1918, p. 330).

The Gilliland Laboratories, Ambler, Pa.

Tuberculin for the Detre Differential Diagnostic Test.—Consisting of one tube each of Original Tuberculin "O. T.", Bouillon Filtrate Tuberculin "B. F." human, and Bouillon Filtrate Tuberculin "B. F." bovine.

CRESOL (See N. N. R., 1918, p. 91).

Cresol-Merck.—A brand of cresol, U. S. P.

Manufactured by Merck and Company, New York.

GUAIACOL CARBONATE (See N. N. R., 1918, p. 87).

Guaiacol Carbonate-Merck.—A brand of guaiacol carbonate, U. S. P.

Manufactured by Merck and Company, New York.

QUININE DIHYDROCHLORIDE (See N. N. R., 1918, p. 281).

Quinine Dihydrochloride-Merck.—A brand of quinine dihydrochloride, U. S. P.

Manufactured by Merck and Company, New York.

QUININE AND UREA HYDROCHLORIDE (See N. N. R., 1918, p. 282).

Quinine and Urea Hydrochloride-Merck.—A brand of quinine and urea hydrochloride, U. S. P.

Manufactured by Merck and Company, New York.

THYMOL IODIDE (See N. N. R., 1918, p. 166).

Thymol Iodide-Merck.—A brand of thymol iodide, U. S. P.

Manufactured by Merck and Company, New York.

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SATURDAY, APRIL 27, 1918

THE CALL FOR MEDICAL OFFICERS

In THE JOURNAL two weeks ago appeared the announcement of Surgeon-General Gorgas to the AMERICAN MEDICAL ASSOCIATION of the need of five thousand additional officers for the Medical Reserve Corps. Last week THE JOURNAL contained the report of the War Committee of the Association outlining the initial steps in the campaign to secure these five thousand volunteers. Already a most encouraging lot of letters have been received from physicians asking for application blanks and for information relative to the service. Even before any systematic appeal has been made the medical profession is indicating that it stands ready to respond.

A number of physicians have stated their circumstances and have asked THE JOURNAL to aid them in making a decision as to whether it is their duty under such and such circumstances to volunteer. The physician who volunteers for the Medical Reserve Corps at this time does so under different circumstances than did the men who volunteered a year ago when our country entered the war. Constructive legislation in the intervening period has removed many of the difficulties which at that time confronted the physician who faced the question as to whether or not he could volunteer for service. Congress has since provided for the care of dependents, for insurance and compensation, for increased pay on foreign service, for commutation of quarters, heat and light, for a moratorium on debts and leases of officers in the service, and for reconstruction and reeducation of the disabled and injured. Army regulations now provide that officers may purchase equipment directly from the Quartermaster's Department. Physicians who entered the service over a year ago did so without the assurance that this new legislation conveys. They made greater sacrifices than are required now.

The physician who comes into the Medical Reserve Corps today has probably been confronted with circumstances which prevented him from volunteering earlier. Many have hesitated because of fear as to the care of their dependents, of the inadequacy of the salary of a medical officer, of provision for their dependents in case of unfortunate disaster to themselves. To these men the Medical Department of the Army can now say that there is no longer cause for such fears and doubts.

The medical profession of Great Britain, well-nigh exhausted by the drains on its services, it is confidently stated elsewhere, will volunteer quickly to fill new demands. The American medical profession will do no less nobly. THE TIME HAS COME FOR EVERY MEDICAL MAN UNDER 55 YEARS OF AGE, WHO IS PHYSICALLY QUALIFIED, TO CONSIDER SERIOUSLY FOR HIMSELF THE QUESTION OF HIS DUTY TO HIS GOVERNMENT.[1]

THE POSSIBILITIES OF COTTONSEED FLOUR AS FOOD

In the extremely active search for new foods which may help to augment the all too limited supply that confronts the nations now at war, attention has repeatedly been directed to cottonseed as a possible addition to the human dietary. The oil of cottonseed is by no means unknown in dietetics, and it is no exaggeration to say that the best grades of the refined product are thoroughly appreciated. Undoubtedly, cottonseed oil also enters, in hydrogenated and solidified form or in its original more liquid state, into some of the novelties that are coming under a variety of trade names to replace the longer known fats used in cookery. Cottonseed meal has been employed for a long time, as a product rich in protein, in animal feeding. Under the name of cottonseed flour a more refined product, probably representing ground and bolted meal, has been proposed and used to some extent in the foods of man.

Some of the advantages that might be expected from it have been emphasized by the experiments of Richardson and Green[2] and of Osborne and Mendel.[3] The protein constituents are of excellent quality in the sense that they yield all of the amino-acids essential for the nutrition of growth. Laboratory animals have been carried into a second generation on cottonseed products as their sole source of protein. Furthermore, like other seeds, that of the cotton plant has a liberal content of the water-soluble vitamin that is now recognized as so important to well being. Despite certain culinary difficulties which seem to be rated

1. Circular of information and application blank will be sent by THE JOURNAL on request.

2. Richardson, Anna E., and Green, Helen S.: Nutrition Investigations upon Cottonseed Meal, I, Jour. Biol. Chem., 1916, **25**, 307; Nutrition Investigations upon Cottonseed Meal, II, ibid., 1917, **30**, 243; Nutrition Investigations upon Cottonseed Meal, III, Cottonseed Flour: The Nature of Its Growth-Promoting Substance and a Study in Protein Minimum, ibid., 1917, **31**, 379.

3. Osborne, T. B., and Mendel, L. B.: The Use of Cotton Seed as Food, Jour. Biol. Chem., 1917, **29**, 289.

with different significance by various experts in the household arts, cottonseed flour has been used in preparing mixed breads and other bakery products. Perhaps the objections to its use in this respect are by no means insuperable, especially since all classes of our population are becoming more tolerant of dietary novelties that upset all household traditions.

There is, however, another aspect of this problem which demands earnest consideration before cottonseed products can be endorsed for the human dietary. It has long been known that the liberal use of cottonseed meal may be attended with what is called cottonseed injury or toxicity in agricultural practice. Every recent investigator of the subject admits that the feeding of the unaltered seeds brings detrimental results. Withers and Carruth,[4] of the North Carolina Agricultural Experiment Station, have associated the harmfulness of the seeds with the presence in them of a toxic substance, gossypol, which is present to the extent of about 0.6 per cent. It appears from the work of the various students of the problem that gossypol is easily oxidized to nontoxic derivatives. The explanation of the lessened toxicity of the usually fed meal or flour, in contrast with the original seeds, lies in the fact that the former products are prepared from the residues left after cottonseed oil has been extracted from the seeds. This process is accomplished with the aid of heat. Accordingly, cottonseed meal is much less toxic than raw cottonseed, owing mainly to the oxidation of gossypol during the cooking that is required in the technic of oil manufacture. The toxicity of cottonseed products varies, according to Withers and Carruth, with the conditions under which the raw seed is cooked.

It seems most unfortunate that a food product as highly digestible and nutritive as cottonseed flour should await greater usefulness because the conditions for rendering its use dietetically safe have not yet been adequately controlled. Until this is done, however, an element of danger inevitably attaches to any propaganda in favor of what ought to become a wholesome food. Gossypol can be extracted from cottonseed; it can be rendered inert by heat. Presumably the manufacturing processes and the cooking requisite for the preparation of edible products eliminate the objectionable features. However, until a flour of guaranteed and established freedom from harm is available under properly controlled auspices, the further development of what may be a useful food industry will be impeded. The difficulties presumably can be solved, and assuredly ought to be, in the interest alike of nutrition and of the industries.

4. Withers, W. A., and Carruth, F. E.: Gossypol, the Toxic Substance in Cottonseed Meal, Jour. Agr. Research, 1915, **5**, 261; Iron as an Antidote to Cottonseed Meal Injury, Jour. Biol. Chem., 1917, **32**, 245. Withers, W. A., and Ray, B. J.: A Method for the Removal of the Toxic Properties from Cottonseed Meal, a Preliminary Report, Science, 1912, **36**, 31; Withers, W. A., and Carruth, F. E.: Gossypol, the Toxic Substance in Cottonseed, Jour. Agr. Research, 1918, **12**, 83.

THE PHYSICAL QUALITIES OF AVIATORS

In considering the special qualities which aviators should have, Surgeon H. Graeme Anderson of the Royal Navy Service and adviser to the British Air Medical Service[1] suggests that in eliminating the unfit — and man power is an ever increasing problem — special flying schools be instituted where border-line pupils could be instructed in flying under the attention of sympathetic instructors and with a medical officer, especially interested in aviation, carefully recording results. In an address before the Medical Society of London last month, he recapitulated, on the basis of an extensive experience, his view as to the necessary physical qualities of aviators. In addition to a sound constitution free from organic disease, a fairly strong physique, normal hearing, good muscle and equilibration sense, the matter of greatest importance is good eyesight, and next to vision is temperament. For this reason an aptitude for flying was found most common among those used to sport and leading an outdoor life. The yachtsmen and the horsemen made skilful pilots. Until recently, the Germans selected aviators from the cavalry. However, occasionally it has been found that the type with the most splendid physique and apparently unshakable courage was unable to learn to fly, whereas the weedy, pale type learned quickly and became first-rate flyers. Candidates for aviation always should be made to undergo a surgical, medical and a special sense examination, preferably by experts, and then the final selection should be made by an especially selected committee. The best age for flyers is about 24 years, including the period from 18 to 30. Flyers should not be under 5 feet, 2 inches, Anderson believes, as they would have difficulty in reaching the rudder bar or looking over the cockpit of the aeroplane. Any evidence of epilepsy, vertigo, migraine, persistent headache, lack of concentration and easily induced fatigue should disqualify. The significance of disabilities of the extremities should depend on the extent to which these interfere with power to work the controls and to use the machine gun. Most movements in controlling an aeroplane are performed below the level of the shoulder. Alcohol should be strictly forbidden among pupils at a flying school, and there seems little doubt that the action of alcohol is accentuated in the air. Untreated or imperfectly treated syphilis, and recent attacks of malaria should bar the candidate from service. It has also been the experience of Surgeon Anderson that malarial attacks are precipitated by the cold experienced in flying, although other physicians believe little emphasis should be laid on this point.

Of course, the special sense examinations are of primary importance. As we stated last week,[2] the experience in the Royal Navy as well as that of

1. Anderson, H. G.: The Selection of Candidates for the Air Service, Lancet, London, 1918, **1**, 395.

2. The Bárány Tests in the Examination of Aviators, editorial, THE JOURNAL A. M. A., April 13, 1918, p. 1096.

American medical officers leads to the view that the aviator should have unaided, normal vision in both eyes and in each eye separately, and also normal color vision. The examination of the organs of the head and neck should be stringent and special attention paid to the presence of clear airway in the nose, as there seems to be definite relation to discomfort in flying and the appearance of severe headache because of lack of sufficient breathing space. The Italian army pays marked attention to this point. Any candidate showing a perforation of the tympanic membrane or cicatrices should be rejected as these men would probably suffer from pain in the ear induced by the incessant noise of the engine and by pressure effects from changing height rapidly. Perfect hearing is very important, especially in starting the aeroplane from the ground in order that the words "contact" and "switch off" given by the mechanic following the swinging of the propeller may certainly be heard and accidents avoided. Surgeon Anderson would also test especially the reaction time with regard to vision, hearing and touch and the emotional reactions according to the tests elaborated by Dr. Nepper. In these tests the aviator has around his chest a pneumograph, in his left hand a trembler and around two fingers of his right hand a pneumatic "doigtier." These are all connected by rubber tubes to stylets writing on a revolving cylinder, and this records the respiratory rhythm, tremor and the peripheral vasomotor control. A revolver shot is fired or a flash-light set off behind the candidate. In the best type of pilot with good nerves, the effects recorded are of very short duration, while in unsuitable ones the respiratory rhythm remains increased for some time, and there is marked tremor and peripheral vasomotor constriction.

In the discussion, Surgeon R. C. Munday, Medical Administrator of the Air Force, approved practically all of Anderson's suggestions and pointed out the great importance of selecting the best men possible without excluding any qualified men. It was his belief that no candidate should be passed within two years of the last manifestation of active syphilis. He is strongly opposed to alcohol being consumed at an aerodrome until the flying is over for the day, and then only in limited quantities. Practically every one of the physicians and officers taking part in the discussion agreed that the factor of vision was of the greatest importance. Mr. Ernest Clark especially said that a simple test with a + glass was insufficient and that cycloplegics should be used.

In this country we have no shortage of man power. Our athletes and our students have come forward by hundreds and even by thousands to enlist in this most hazardous yet fascinating service. Yet we should not be blind to the fact that very special qualities are needed, and the material should be most carefully sorted with a view not only to selecting the most capable men, but also to selecting all the capable men.

THE STABILITY OF VITAMINS

There is a widespread impression that those as yet little understood, but apparently indispensable components of the diet popularly termed vitamins are easily destroyed by heat. Obviously the establishment of the truth in this respect is a matter of great importance. Most of the foods that enter the diet of man beyond the period of infancy are subjected to heat in cooking; and at present the practice of food preservation as a part of the conservation movement involves the application of heat. One need only recall the preparation of canned vegetables, tinned meats and milks, and the sterilization of milk by heating, to appreciate a further aspect of the problem.

The statements as to the instability of vitamins toward heat seem, to a large extent at least, to be an outcome of the widely held belief that heated milk is responsible for infantile scurvy, which, in turn, is conceived to be a deficiency disease. As we have pointed out in the past, the etiology of scorbutus is far from being definitely understood, and the bearing of the milk factor in the genesis of the symptoms is still open to new interpretations. The most promising method of ascertaining the truth would seem to consist in studying the effect of heat on sources of vitamin that can be tested in unmistakable ways. One of these is afforded by the ready production of experimental avian polyneuritis, the analogue of human beriberi, which is easily relieved by suitable vitamin products. The results and their proper interpretation are usually clear. In this way several American investigators have shown that the boiling temperature of water is by no means entirely destructive to the antineuritic vitamin, even though heating under pressure may be destructive in its effects.

At the Lister Institute in London, Chick and Hume[1] have renewed the study of the fate of vitamins on heating, employing the antineuritic properties of the wheat embryo and of yeast as test objects. They found that exposure of wheat embryo to a temperature of about 100 C. (212 F.) for two hours resulted in no significant loss in antineuritic "vitamin." If, therefore, it is included in the flour from which bread or biscuit is made, it can be relied on to retain its antineuritic properties after baking. At temperatures in the neighborhood of 120 C. (248 F.), however, there was a swift destruction of antineuritic properties. This fact has an important bearing where diets are largely composed of preserved and canned foods previously sterilized at temperatures above 100 C.

There is at present a pronounced difference of opinion as to the nature of scurvy. The classic experimental animal for the study of this condition has been the guinea-pig. Holst has found that it will develop

1. Chick, Harriette, and Hume, E. Margaret: The Effect of Exposure to Temperatures at or above 100 C. on the Substance (Vitamin) whose Deficiency in a Diet Causes Polyneuritis in Birds and Beri-Beri in Man, Proc. Roy. Soc., B., 1917, **90**, 60.

the disease in acute form if kept on a diet of cereals with water or sterilized milk. McCollum and his associates are unwilling to admit that scurvy belongs to the deficiency diseases in the sense of being caused by a lack of vitamins in the diet. They associate it rather with the absence of suitable texture or bulk to the food so that the intestinal functions are not appropriately exercised. In the forms of scurvy familiar in human experience, fresh fruits and vegetables are believed to have a pronounced curative virtue. Obviously the facts can be adjusted to a variety of hypotheses. It may be assumed that the curative foods mentioned furnish needed vitamins or that they succeed by altering the alimentary functions in a beneficial way. In any event, Holst reported that the antiscorbutic power of certain fresh foods, notably cabbage, was slightly lessened after exposure to 100 C. for half an hour, but that the deterioration was appreciable after one hour; at from 110 to 120 C. (230 to 248 F.) the destruction was rapid and complete. If such evidence is accepted, it would seem as if neither the antineuritic vitamin nor the antiscorbutic property, whatever the latter may be, can be expected to survive in canned or sterilized foods that have been subjected to temperatures approaching the damaging limits mentioned.

Chick and Hume,[2] who have studied the distribution among foods, especially those suitable for the rationing of armies, of the substances required for the prevention of beriberi and scurvy, respectively, have come to the conclusion, to quote their own words, that "the antiscorbutic vitamin is present in active living vegetable tissues. It is also present in animal tissue, to a much less degree. Fresh vegetables and fresh fruit juices are the most valuable sources of antiscorbutic vitamin that we possess. All the dried foodstuffs examined, including desiccated vegetables, were more or less deficient in this vitamin." These investigators at the Lister Institute in London have further stated that dry legumes and cereals, though rich in antiberiberi vitamin, are deficient in antiscorbutic vitamin, and afford no protection against scurvy. If these are moistened, however, and allowed to germinate, the antiscorbutic principle is regenerated with the beginnings of active cell life. In view of their own experiments and the existing literature on the subject, Chick and Hume believe that in the case of armies or other populations subsisting largely on canned food, it is imperative to provide an adequate supply of vitamin from outside sources. Their dicta are: To prevent beriberi, the bread or biscuit should be made from whole-meal or germ-containing flour. To prevent scurvy, if a supply of fresh fruit or vegetables is not procurable, germinated legumes should be added to the diet.

2. Chick, Harriette, and Hume, C. Margaret: The Distribution among Foodstuffs (Especially Those Suitable for the Rationing of Armies) of the Substances Required for the Prevention of (A) Beriberi and (B) Scurvy, Tr. Soc. Trop. Med. and Hyg., 1917, **10**, 141.

We may admit the wisdom of giving due consideration to this carefully planned advice without thereby accepting the hypotheses that have been injected into it. It would be folly, we believe, to proclaim any wholesale condemnation of foods preserved with heat as devoid of antiscorbutic properties until far more evidence is available — evidence obtained without the prejudice of a preconceived theory of etiology. The propaganda for conservation of food by drying must not receive a setback until more conclusive proof of an actual deficiency of any vitamins that they may originally have contained is furnished. Nor must the interesting and valuable vitamin theory be allowed to overshadow completely the fact that calories are necessary for nutrition.

RETROGRESSION IN NEW YORK CITY

Preceded by a "private enquiry," there are now being held public hearings in New York City on the proposal to abolish the various bureaus of the Health Department of the City of New York. The excuse that is said to have been given by Mayor Hylan for this proposal is the excuse common to politicians — cutting down expenses! It would be just as rational to attempt to cut down expense by abolishing the street cleaning department and by discharging half the firemen and policemen in the metropolitan district.

The mayor's contention seems to be that as the city charter — of a half century ago — only specifies by name two bureaus in the Department of Health, the present subdivision into nine bureaus is illegal and should be abolished. This, too, in spite of the fact that the law department of New York City has, on more than one occasion, rendered opinions that the present system conforms with the law.

As now constituted, the directors of the nine bureaus in the Department are under the Civil Service law and cannot be discharged by the major unless incompetence or insubordination is definitely proved. Abolishing the bureaus will, of course, abolish the directors. There will then, apparently, be nothing to prevent the mayor from appointing his own "chiefs" to carry on the work of the Health Department.

Such a reorganization would not only give to the new administration a great opportunity for the distribution of political patronage; it would also make it possible to put in the place of those now acting as directors of the various bureaus individuals who would be more solicitous of various big businesses whose activities are opposed to public health. It may be assumed that under a political organization there would be no Bureau of Public Health Education, such as that now headed by Dr. Charles F. Bolduan. This bureau, one of the most important in the Department, has been unremitting in its efforts to give the New York public information regarding the nostrum evil and quackery. Needless to say, it has aroused tremen-

dous opposition on the part of the quacks and nostrum venders. While it is probable that not even a Tammanyized administration would dare to abolish altogether the work now done by the Bureau of Food and Drugs under the direction of Lucius P. Brown, it is conceivable that a man could be put in charge of such work who might be counted on to be not too harsh with those who fatten on the sale and manufacture of sophisticated food and drugs. Possibly some of the other bureaus have, in the execution of their duty, offended powerful interests.

There never existed a public health organization worthy of the name that did not bring down on its head the maledictions of those with whose activities it interferes. Whether the war against these various departmental agencies is being prompted by those who have been hurt by the Health Department's activities or whether it represents typical municipal partizan politics makes little difference; the result, if successful, will be the same. It is to be hoped that the best elements of the City of New York will get together and prevent the present highly efficient health administration of New York City being disorganized and put back into a régime that has been abolished by every progressive city in the United States.

Current Comment

COMMUTATION OF QUARTERS FOR OFFICERS

The President has signed the bill for commutation of quarters. The bill provides that "during the present emergency every commissioned officer of the Army of the United States on duty in the field, or on active duty without the territorial jurisdiction of the United States, who maintains a place of abode for a wife, child or dependent parent, shall be furnished at the place where he maintains such place of abode, without regard to personal quarters furnished him elsewhere, the number of rooms prescribed by the Act of March 2, 1907, to be occupied by, and only so long as occupied by, said wife, child or dependent parent; and in case such quarters are not available every such commissioned officer shall be paid commutation thereof, and commutation of heat and light, at the rate authorized by law in cases where public quarters are not available; but nothing in this Act shall be so construed as to reduce the allowances now authorized by law for any person in the Army." This most important legislation is destined to relieve much real distress. Like much other legislation, the verbiage of the law is doubtful on some points and the comptroller has been asked to issue rulings and interpretation of the new legislation for the guidance of disbursing officers. The law was passed in order that officers who are compelled to maintain a residence for their dependents may receive commutation to help meet this drain on their resources. The question has arisen as to whether officers on duty abroad, who are provided with commutation of quarters, heat and light, for instance, in France, will also receive allowance for a family in this country. According to the *Army and Navy Register*, "It is hoped that the comptroller will decide that an officer may draw double commutation of quarters for the full number of rooms allowed for his grade with commutation of heat and light, for the number of rooms actually occupied abroad by himself, and the number of rooms actually occupied by the members of his family at home." Another question concerns the interpretation of the words "wife, child and dependent parent," and it is suggested that the latter term includes father, mother, grandfather, grandmother, step-father, step-mother, either of the officer or of his wife. For those physicians who do not understand the interpretation of the term "commutation of quarters," we may say that a commissioned officer on duty at a place at which no public quarters are available — such as an Army post — is entitled to commutation of quarters, which amount is added to the pay of the officer by the paymaster each month. The officer is also entitled to commutation for fuel and light, which is also entered on his voucher according to tables published in Army Regulations. The commutation consists of $36 for first lieutenant, $48 for captain and $60 for major. As will also be seen from the text of the law, this commutation of quarters is not paid to unmarried officers unless they maintain a home for a dependent parent.

ABSORPTION THROUGH UNUSUAL SURFACES

The question as to the possibilities of absorption through the exterior surfaces of the body has often been raised, particularly with respect to the permeability of the skin and some of the mucous membranes to drugs and to poisons that might reach these parts of the organism accidentally in industrial processes. It is quite generally regarded as established that the sound skin is impermeable for watery solutions of salts and other substances. Where the integument has been injured by a blister, or its surface has been denuded in some way, the exposed tissue may possibly offer an avenue of entrance for soluble products. This is not, however, a true cutaneous absorption. The possibility of absorption by inunction of substances dissolved in fats or fatlike compounds cannot be denied. It has been emphasized anew by studies, recently reported in The Journal, on the behavior of mercury applied in this way.[1] But as a well known physiologist remarked in a recent textbook, it is difficult to imagine that any appreciable amount of cod liver oil will be available for the nutrition of an infant when this fat is administered by being rubbed on the skin. That moist mucous surfaces, like the conjunctiva, permit of the transport of drugs through them is generally assumed in the daily practice of introducing substances into the conjunctival sac in ophthal-

1. Schamberg, J. F.; Kolmer, J. A.; Raiziss, G. W., and Gavron, J. L.: Experimental Studies of the Mode of Absorption of Mercury when Applied by Inunction, The Journal A. M. A., Jan. 19, 1918, p. 142. The Absorption and Excretion of Mercury, Current Comment Feb. 9, 1918, p. 392.

mologic routine. D. I. Macht,[2] of the Johns Hopkins laboratories, has demonstrated that in such cases the absorption is due, in part at least, to direct entry into blood and lymph channels, and is not solely the result of an indirect absorption through the nasal ducts. For even when the latter were completely obstructed, sufficient apomorphin to produce vomiting could still be absorbed from the eye into the general system. As apomorphin produces its emetic action by direct stimulation of the vomiting center, the use of this drug in the study of the permeability of unusual surfaces excludes any confusion with reflex effects set up by local irritation. Apomorphin itself must permeate to the blood stream before it can unfold its specific activities. Macht has therefore employed it to demonstrate absorption through the vaginal wall, the urethra, the prepuce, the nasal canal and other structures. In many of these instances the suspicions of experience are supported by the demonstrations of the controlled experiment.

THE SUPREME COURT DECISION ON THE CORPORATE RIGHTS OF THE AMERICAN MEDICAL ASSOCIATION

In 1910 the state's attorney of Cook County (Chicago) was petitioned to institute "quo warranto" proceedings against the American Medical Association on the grounds that the Association's affairs were being conducted illegally in that its officers were elected at annual sessions held outside of the state of Illinois. The state's attorney refused to take action in the matter, and later, the attorney general of the state, who was appealed to, also refused to act. January 5, 1911, mandamus proceedings were begun in the Circuit Court of Cook County, Illinois, to compel the state's attorney to initiate the quo warranto action which he had declined to institute. Until December 20, 1915, the issue was between the parties asking for the "mandamus" and the state's attorney of Cook County, Illinois; the point at issue being the technical one as to whether the state's attorney was compelled to act or had discretionary authority in the matter. The case went through the lower courts and finally was carried to the Supreme Court of Illinois, which in December, 1915, refused to hear arguments on the merits of the cause as it related to the American Medical Association, but ordered the Circuit Court to take up the original quo warranto proceedings designed to raise the question of whether or not Illinois corporations "not for profit" are compelled to hold their elections and conduct their business within the confines of the state. Up to this point the American Medical Association was not technically interested in the controversy; now, however, it became a party in the action. Quo warranto proceedings against the members of the Board of Trustees were instituted in the Circuit Court of Cook County, Illinois, which after trial rendered a decision favorable to the Association. The case was then carried to the Appellate Court of Illinois, which confirmed the decision of the Circuit Court. An appeal was finally made to the Supreme Court of Illinois, which last week (April 16) rendered its decision, settling the question. This decision is entirely satisfactory so far as the Association is concerned. One paragraph of the opinion reads:

> It seems reasonably to follow that if a corporation not organized for pecuniary profit may hold meetings at stated times outside of the State of Illinois, composed of delegates selected by the constituent associations, for the transaction of business of the corporation, it is not unlawful to authorize and provide for the election by said house of delegates of trustees of the corporation. The American Medical Association was organized solely for the purpose of the advancement of medical science. Its purpose was to improve methods for the treatment and prevention of diseases of the human race. Its usefulness for these purposes would be seriously interfered with, if not absolutely destroyed, if it could not provide for the election of trustees from the most efficient men in the association throughout the United States, by delegates selected by the constituent associations from the various States in the Union. Such authority to the house of delegates is conferred by the by-laws and is not in conflict with or prohibited by the constitution or laws of Illinois relating to corporations not for pecuniary profit.

The decision is important not only to the American Medical Association, but also to all organizations incorporated under the law of Illinois — in fact of any state — governing corporations "not for profit."

ANOTHER APPEAL TO THE BRITISH MEDICAL PROFESSION

The *British Medical Journal* for March 30 presents a rather gloomy survey of the situation so far as concerns the Medical Department of the British Army. Even before the drive of the last four weeks, the ranks of the civilian medical profession had been pretty well drained. Our contemporary practically acknowledges that 45,000 prisoners were taken, and that in this total must be included a large number of medical officers. In addition, it is quite probable that many medical men were killed or seriously wounded. "The emergency is so great," it says, "that the Ministry of National Service makes an urgent appeal to members of the medical profession to come forward with offers of voluntary service to meet the existing pressure. The appeal is made — First, to medical men now in this country who have relinquished their commissions and have not rejoined. Their services are immediately and urgently required with the armies in France. Secondly, an appeal is made to medical men under the age of 55 who are physically fit to offer their services either at home or abroad." It goes on to say that the number of men in these categories that can be available is small, and that in many areas the number of civilian practitioners has been reduced to a level which has caused anxiety to the civil authorities. "But the situation which has to be faced is serious, and we are confident that the voluntary spirit of medical men will face it. Every one of them who responds immediately will be performing an act of practical patriotism as well as of individual fortitude."

2. Macht, D. I.: On the Absorption of Apomorphin and Morphin through Unusual Channels, Proc. Soc. Exper. Biol. and Med., 1917, 15, 26.

Medical Mobilization and the War

Personnel of the Medical Department

For the week ending April 19, 1918, the personnel of the Medical Department of the Army included:

MEDICAL CORPS: 843, including 1 major-general, 66 colonels, 102 lieutenant-colonels, 195 majors, 2 captains and 477 lieutenants.

MEDICAL RESERVE CORPS: 18,651, including 1,194 majors, 4,418 captains and 13,039 lieutenants. On active duty: 16,042, including 1,063 majors, 3,949 captains and 11,030 lieutenants.

MEDICAL CORPS, NATIONAL GUARD: 1,207, including 16 lieutenant-colonels, 249 majors, 150 captains and 792 lieutenants.

MEDICAL CORPS, NATIONAL ARMY: 111, including 3 brigadier-generals, 11 colonels, 89 lieutenant-colonels and 8 majors.

DENTAL CORPS, 209; DENTAL RESERVE CORPS, 5,207; of whom 1,357 are on active duty; DENTAL CORPS, N. G., 259; VETERINARY CORPS, 18; VETERINARY RESERVE CORPS, 1,432, of whom 823 are on active duty; VETERINARY CORPS, N. G., 51; VETERINARY CORPS, N. A., 374; SANITARY CORPS, 1,028, and AMBULANCE SERVICE, 154, constitute the remainder of the commissioned personnel.

The DISCHARGES in all branches of the service to date are:

Causes	Number			
	M.R.C.	M.C.N.G.	D.C.N.G.	San.C.
Duty completed	1	0	0	0
Physical disability	532	42	7	6
Inaptitude	213	16	0	1
Other branches of service	443	61	7	59
Domestic troubles	52	1	0	1
Resignations	166	45	5	6
Needed by community	36	1	0	0
Deaths	52	3	0	1
Dismissals	3	2	0	0
Good of service	0	1	0	1
	1,598	172	19	75

American Medical Officers Under Fire

Press dispatches call particular attention to the actions of American physicians and nurses in the midst of the great drive now taking place on the Western battle front. They reveal that the medical officers conducted themselves with exceptional bravery and coolness while under fire. As the Germans advanced it became necessary for casualty clearing stations and field hospitals to retire. How difficult a task this was may well be conceived by any one with a knowledge of what it means to transport thousands of wounded and tons of equipment while under fire and along roads jammed with the tremendous paraphernalia of the fighting army. It is reported that when the offensive opened the British had large advance stations which came under immediate pressure. While shells and bombs rained on the hospitals, the physicians and nurses continued to attend the wounded, to pack supplies and to arrange for transportation. The severely wounded were carried back in ambulances, but every man able to walk was forced to transport himself back to his new station. It is reported that the more valuable surgical instruments and supplies were taken in charge by physicians who in many cases personally piled them on wheeled stretchers and pushed them for long distances.

Social Hygiene Division

The War and Navy Departments Commissions on Training Camp Activities have formed a social hygiene division under the head of Major William F. Snow of the Surgeon-General's Office. The work of the division will be entirely educational, and will be divided into three sections with Dr. Katherine B. Davis, William H. Zinsser and Lieut. Walter Clarke as directors. Lieutenant Clarke will continue the educational work that he has been doing in the cantonments with the full cooperation of the War Department and with a large staff of lecturers on social hygiene. The lectures are compulsory with the men in the camps, and exhibits and literature are used in connection with them. The section on men's work under the direction of William H. Zinsser will concern itself with the education of men in civilian communities. This work was formerly under the direction of the Council of National Defense, but is now transferred to the social hygiene division under the Commission on Training Camp Activities. Dr. Katherine B. Davis will direct the section on the education of women and girls. A lecture bureau will be maintained in cooperation with the social morality committee of the war work council of the National Y. W. C. A., the American Social Hygiene Association and similar organizations, which have also previously cooperated with the other sections named. This bureau will supply lecturers to groups of women and girls and will work in industrial communities as well as in communities adjacent to camps.

Reconstruction and Reeducation of Disabled Soldiers

The Department of Reconstruction and Reeducation of the Surgeon-General's Office has just issued Bulletin No. 3 of its series on this subject, consisting of abstracts, translations and reviews of the recent literature on reconstruction and reeducation of the disabled soldier. The present bulletin, dated April 15, consists of 112 pages, and is Part One of a series to be entitled "The Story of a Crippled Soldier's Progress from Disablement to Placement in Civil Life." It describes the experiences of Great Britain and France. In Bulletin No. 4 it is intended to supplement the history by describing the same evolution in Canada, Italy, Belgium, Austria, Germany, and perhaps in other belligerent countries.

British Military Cross Awarded to American Medical Officer

It is reported that Lieut. Theodore Higgins Sweetser, M. R. C., has been recommended for the British Military Cross for conspicuous gallantry and devotion to duty. The recommendation reads:

He gave valuable assistance to more than forty men suffering from gas, while he, himself, also was suffering from the effects. His two noncommissioned officers had succumbed. He also rendered valuable assistance to a party of tunnelers, the entrance of whose dugout had been struck by a gas shell, waking the men and forcing the tubes of their respirators into their mouths and clips into their noses. But for his prompt attention, a large number of men would have succumbed.

In a letter to Lieutenant Sweetser, General Pershing is reported to have said:

The commander-in-chief desires me to say that he appreciates the splendid conduct shown by you on this occasion.

Control of Venereal Diseases in Massachusetts

The Massachusetts State Department of Health has declared gonorrhea and syphilis "diseases dangerous to public health" and reportable directly to the state department of health. The department feels that the system of venereal disease reporting possessing the greatest potential benefit to the public health and the least objectionable features from the standpoint of the patient and the physician should combine the following features: 1. It should have a definite educational value. 2. It should impress the patient with the seriousness of the disease. 3. It should make the patient understand the possibilities for harm to others because of its infective nature. 4. It should impress on the patient the need of proper medical guidance. 5. It should, as far as it is consistent with the best interests of the public health, respect the patient's instinctive desire for secrecy.

All regulations, reports and circulars have been prepared with these principles in view. The name of the patient becomes reportable only when he will not follow proper medical advice or cease from infecting others. The identity of the reporting physician is not even revealed.

The Massachusetts venereal disease program may be separated into four general divisions: (1) venereal disease reporting; (2) the problem of extension of facilities for diagnosis and early treatment; (3) repressive measures, and (4) educational measures.

The so-called "West Australian" method of reporting is adopted. At the time of the first visit or consultation the physician furnishes the patient with a numbered circular of information and advice. At the same time he fills out the numbered report blank attached to the circular of advice and mails it to the state department of health. If the patient has been under the care of another physician previously, the second physician consulted notifies the first one on a special blank provided for that purpose. If the patient fails to return to the attending physician for a period of six weeks, the physician notifies the state department, which, in turn, notifies the local board of health of the community in which the patient resides.

Adequate provision has also been made for measures of diagnosis and treatment. Laboratory diagnostic facilities are now pretty generally available throughout Massachusetts. Smears are examined and Wassermann tests are made free. The state department contemplates the establishment of some fifteen "state-approved" clinics to be situated in the center

of a district. A "chief" is to be in charge of this clinic to act as agent for the state department in the distribution of arsphenamin. The objects will be thorough diagnosis, better treatment, modern follow-up work, and closer cooperation with the practicing physician.

Under the heading "repressive measures" are grouped a number of antivenereal measures that involve the joint utilization of police power and social agencies. The principal repressive measures contemplated are: (1) suppression of prostitution; (2) venereal control in the penal population; (3) the venereal quack problem, and (4) indirect control through the license power of the state. Legislation has been introduced prohibiting the druggists from prescribing for venereal diseases and prohibiting the sale of venereal remedies except on a physician's prescription.

The most characteristic features of this new program against prostitution are the emphasis placed on prostitution as an epidemiologic rather than as a penal problem, and treating the individual prostitute as a disease carrier instead of officially ignoring her existence. Legislation has been introduced requiring thorough physical examinations of all inmates of penal institutions. A statutory provision exists now under which a prisoner infected with syphilis may be restrained beyond his term of commitment for the purpose of treatment. It is believed, confidently, that with the establishment of free or low-pay clinics throughout the state, where the highest quality of scientific treatment for venereal diseases is made accessible for every one, there will vanish the last excuse for the existence of the advertising venereal quack. The control of license power contemplates control through medical license power, druggist license power, liquor license power and marriage license power.

Educational measures look rather toward the future. The success of all other measures will be greatly increased by the active support of public opinion, founded on knowledge of the facts. The plans worked out for the reporting of the disease are educational. The proposed clinics will serve as educational centers where information may be secured and where approved forms of treatment may be demonstrated. Small framed placards giving information will be posted in public toilets and other suitable places. Pamphlets, lectures, and the instruction of college and normal students will also be means for spreading educational propaganda and knowledge regarding these diseases, and all these, it is believed, will eventually lead to the conduct of a campaign against venereal diseases in newspapers and magazines on the same plane as the discussion of fire dangers, accidents in industry, or any other serious problem that threatens the public welfare.

IN OTHER STATES

Iowa declared venereal diseases reportable in 1913, and also prescribed a penalty for the transmission of these diseases.

In California, syphilis and gonorrhea were made reportable diseases, beginning Jan. 1, 1911.

Feb. 20, 1918, the Tennessee State Board of Health issued an order requiring all county and municipal boards of health to report cases of gonorrhea and syphilis regularly on the first day of every month.

Other states in which similar rules are now effective are Ohio, Illinois, New Jersey, Minnesota, Pennsylvania and North Carolina.

Cities also have passed legislation requiring the reporting of venereal diseases. Chicago passed an ordinance, June 29, 1917. The sanitary code of 1915 of New York City provides for reporting venereal diseases. The department of health maintains that all facilities for the diagnosis of infectious preventable diseases properly fall within its province, and conforming thereto it has provided every available means for the ready diagnosis of these diseases, free of cost. It also performs the Wassermann test and the complement fixation test for gonorrhea, examines smears for gonococci and spirochetes, and makes cultural examinations of urinary sediments and urethral discharges.

Part of the New York educational campaign consists in combating quackery by enforcing the regulations of the board of regents and the board of aldermen, and by an effort to divert prospective victims from the quacks through newspaper advertising and the posting of venereal disease signs in suitable locations. Circulars of information and instruction are issued for distribution among patients.

Denver has just joined in the fight against venereal diseases by adopting an ordinance "to protect the public health and to prevent and restrain venereal diseases in the city and county of Denver." Syphilis, gonorrhea and chancroid are declared to be contagious, communicable and infectious diseases and dangerous to the public health, and subject to quarantine and isolation when deemed a menace. Physicians and druggists must report these diseases whenever they have knowledge of a case. This also applies to hospitals and other institutions. Unfortunately Denver did nothing with reference to advertisements of antivenereal remedies in the newspapers.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

From Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending April 12, 1918

1. ANNUAL ADMISSION RATE PER 1,000 (DISEASE ONLY):
   - All Troops 1,627.1
   - National Guard Camps 1,232.2
   - National Army Camps 1,959.4
   - Regular Army 1,502.5
2. NONEFFECTIVE RATE PER 1,000 ON DAY OF REPORT:
   - All Troops ..... 48.
   - National Guard Camps 27.8
   - National Army Camps 55.7
   - Regular Army 44.8
3. ANNUAL DEATH RATE PER 1,000 (DISEASE ONLY):
   - All Troops 11.3
   - National Guard Camps 3.4
   - National Army Camps 17.9
   - Regular Army 10.3

NEW CASES OF SPECIAL DISEASES REPORTED DURING THE WEEK ENDING APRIL 12, 1918

Camps	Pneumonia	Dysentery	Malaria	Venereal	Measles	Meningitis	Scarlet Fever	Deaths	Annual Admission Rate per 1,000 (Disease Only)	Noneffective per 1,000
Wadsworth	4	..	..	16	3	..	1	0	846.1	24.6
Hancock	4	..	..	32	10	..	2	1	602.0	26.8
McClellan	5	..	..	21	1	2	...	0	1,263.8	35.6
Sevier	16	..	..	20	9	2	1	5	1,021.4	30.0
Wheeler	3	1	2	23	...	2	...	3	1,355.1	55.3
Logan	12	..	2	32	14	..	6	0	1,653.0	35.0
Cody	26	..	..	11	...	..	...	8	640.7	27.3
Doniphan	...	..	..	....	...	..	...	0	1,065.0	14.9
Bowie	25	..	..	54	...	..	...	3	2,260.1	54.0
Sheridan	6	..	..	20	...	1	2	1	1,204.4	36.1
Shelby	...	..	1	13	...	..	...	0	1,470.9	52.5
Beauregard	9	..	13	40	...	1	...	0	1,454.7	56.0
Kearny	1	..	1	2	...	..	11	1	1,131.8	45.6
Devens	38	..	..	50	5	2	7	10	1,623.6	47.0
Upton	20	..	..	50	17	1	5	6	827.8	32.0
Dix	5	1	..	163	11	1	10	2	1,733.8	41.2
Meade	25	..	..	15	5	1	1	7	497.2	31.4
Lee	15	..	..	179	14	1	...	6	1,751.2	60.2
Jackson	29	..	..	14	24	2	...	5	1,533.5	55.5
Gordon	26	..	1	129	38	1	6	3	2,282.7	46.3
Sherman	25	1	..	184	9	..	16	19	2,267.0	55.7
Taylor	28	..	..	26	57	..	3	15	3,272.9	95.4
Custer	72	..	1	77	6	..	12	15	1,406.0	36.2
Grant	7	..	..	13	10	1	7	8	842.2	27.4
Pike	22	..	8	55	23	2	6	10	2.715.4	71.1
Dodge	30	..	..	57	29	..	23	34	2,603.5	120.6
Funston	31	..	..	85	19	..	4	11	1.837.0	83.9
Travis	21	2	1	41	28	1	...	7	4,839.4	70.4
Lewis	27	..	..	87	1	..	17	7	1,882.1	56.3
Northeastern Dept.	6	..	..	20	9	..	1	5	1,863.0	45.9
Eastern Dept.	10	..	1	62	10	..	...	5	1,329.8	33.0
Southeastern Dept.	9	..	3	34	13	..	1	7	1,323.8	49.1
Central Dept.	23	1	1	30	17	2	23	8	1,451.6	44.3
Southern Dept.	21	2	2	56	16	..	9	6	1,834.9	55.3
Western Dept.	8	..	1	28	10	..	7	3	1,187.4	27.0
Aviation, S. C.	34	..	2	88	86	1	48	27	1,490 0	40.4
Camp Greene	9	..	..	22	9	2	3	3	1,320.3	45.8
Camp Fremont	3	..	..	12	19	2	...	1	2,457.8	78.8
El Paso	1	..	..	11	1	..	1	0	1,476.3	6.7
Columbus Bks.	3	..	..	10	2	..	...	3	1,471.4	58.6
Jefferson Bks.	5	..	..	62	3	..	10	3	4,247.4	125.1
Fort Logan	7	..	..	1	2	..	6	6	2,065.9	86.2
Fort McDowell	...	..	1	5	1	1	5	0	1,914.1	64.4
Fort Slocum	4	..	..	10	1	..	...	1	1,743.0	50.0
Fort Thomas	1	..	..	2	6	..	...	0	1,431.2	67.3
D. B. Alcatraz	...	..	..	....	...	..	...	0	.....	....
D. B. Fort Leavenworth	2	..	..	1	...	..	...	2	1,167.0	38.4
A. A. Humphreys	...	..	..	....	1	..	...	0	.....	....
J. E. Johnston	2	1	1	44	7	1	1	0	1,472.4	37.3
Camp Merritt	20	..	..	112	4	2	14	7	1,412.0	56.6
Camp Stuart	19	..	..	144	8	2	1	11	1,545 7	64.8
West Point, N. Y.	...	..	..	....	...	..	...	0	451.9	12.4
Edgewood-Aberdeen	1	..	..	2	7	..	1	0	1,398.8	40.1
Provisional Depot for Corps and Army Troops	11	..	1	23	20	..	...	1	1,868.7	44.5
Camp Holabird	...	..	..	1	...	..	...	0	.....	....
Camp Raritan	...	..	..	1	2	..	...	0	672.4	20.5
Nat'l Guard Depts.	2	..	..	17	9	..	1	1	.....	....
Nat'l Army Depts.	35	..	3	167	81	1	22	9	.....	....
Total (all troops)	838	9	41	2,485	677	35	294	206	1,627.1	48

ANNUAL RATE PER 1,000 FOR SPECIAL DISEASES

	All Troops in U. S., Week Ending April 12, 1918	Regulars in U. S., Week Ending April 12, 1918	National Guard, All Camps, Week Ending April 12, 1918	National Army, All Camps, Week Ending April 12, 1918	Expeditionary Forces, Week Ending April 4, 1918
Pneumonia	34.6	25.6	19.9	52.9	35.8
Dysentery	0.4	0.5	0.16	0.4	1.0
Malaria	1.7	1.6	3.1	0.7	0.0
Venereal	102.8	95.5	46.7	134.8	49.2
Paratyphoid	0.0	0.0	0.0	0.0	0.1
Typhoid	0.04	0.1	0.0	0.0	0.3
Measles	28.0	31.9	6.0	32.6	10.3
Meningitis	1.4	1.6	1.3	1.4	3.3
Scarlet fever	12.1	16.4	3.6	13.0	13.7

NEWS OF THE CANTONMENTS

Thirty-First Division, Camp Wheeler, Macon, Ga.

APRIL 19, 1918.

NEW EPIDEMIC

An epidemic of influenza now prevails in the camp with about 500 cases. It appears that one epidemic follows another like the seven plagues of Egypt. Influenza is not a serious disease, the attacks lasting only a few days; but it swells the sick report, and recalls previous visitations of mumps, measles and pneumonia. One always wonders what is coming next.

A detachment of 200 negroes that recently arrived at the camp, now has mumps to the extent of forty cases. No attempt is made to prevent the spread of this disease.

SANITARY WORK

The extensive swamps in and around Camp Wheeler are being cleared and drained. Those inside are being done by the camp authorities, those outside by the Public Health Service. Captain Green of the Sanitary Corps is making a survey of the inner area and laying out the ditching work. The continued cold weather has prevented any extensive mosquito breeding up to the present time, even had there been no antimosquito work.

Latrine boxes and screens are being repaired in anticipation of the fly season. The present warm weather will hasten their arrival.

PERSONAL

Lieutenant-Colonel McCormack, who has been inspecting the sanitary train, accompanied the division on the recent march.——Major Gaylord, M. C., of Buffalo, has recently arrived from Allentown, Pa., for duty as assistant to the camp surgeon.——Lieutenant-Colonel Duncan has brought his family to Macon, where they will remain until the division leaves for France.——Lieutenant-Colonel Turck has gone to Camp Doniphan, Fort Sill, Okla., for duty as division surgeon of the Thirty-Fifth Division.——Lieutenant-Colonel McCormack is leaving for Camp Lee, after an instructive inspection of the One Hundred and Sixth Sanitary Train.——Major Harrold, One Hundred and Twenty-First Infantry, and Major Taylor, One Hundred and Eighteenth Artillery, attended the medical meeting at Savannah.——A lieutenant of the Medical Reserve Corps is being tried for charging enlisted men for medical services. A dental surgeon was recently convicted on a similar charge.

PRACTICE MARCH

The Thirty-first Division made a five days' march during the last week. The sanitary train was an important part of the column. The whole train marched, although there was transportation for but three ambulance companies and one field hospital. The mule ambulance companies furnished ambulances for the regiments on the march, with one motor company in the rear of the column, for the overflow, it having been demonstrated that motor ambulances cannot be mixed in a column of infantry. Another motor company acted as an evacuation column, carrying patients from the field hospital to the base hospital at Camp Wheeler. About 300 patients were thus evacuated. Sick call was held in the afternoon, and the evacuation carried out in the evening or at night. All ambulances were ready to start clear each morning. It was the general opinion that the sanitary train functioned well; no complaint of neglect was heard. The excessive number of patients was due to the prevailing influenza epidemic.

Lincoln Division (Eighty-Fourth), Camp Zachary Taylor, Louisville, Ky.

APRIL 22, 1918.

LINCOLN DIVISION

The official seal and insignia of the Eighty-Fourth Division at Camp Zachary Taylor has been definitely adopted. It has been approved by the commander Major-General Hale, and will be put into use at once. In designing the emblem the idea of carrying out the name of Lincoln was adhered to. The center of the insignia is a woodchopper's ax, symbolical of the "Railsplitter." Above appears the name of the martyred President and below the number of the division. The national colors are included in the scheme. The circles and head of the ax are red, the lettering and the ax handle blue and the field is white.

PHYSICAL TESTS

The physical tests of medical officers of the camp have begun under the direction of Lieut.-Col. Luther R. Poust, acting camp surgeon. Every afternoon scores of medical officers are ordered to report to the drill field like ordinary soldiers. They are put through the school of the soldier. Many of the officers have never drilled before and plainly show the effects of the three-hours' work. The movement is only to show to the satisfaction of their superior officers that they are fit physically to stand the rigors of the war in France. It is understood that those medical officers who fail to qualify physically for foreign service will not be discharged, but will be left in the army camps of the United States to train the coming new drafted men. Within a few weeks they will be taken on 30-mile rides each day and put through other tests which, when completed, will leave only those medical officers who are fit for foreign service.

SURGICAL OPERATIONS

Men drafted into the National Army who have physical defects that may be remedied by surgical operations and who refuse to submit to the surgeon's knife will be courtmartialed under the Ninety-Sixth Article of War, and are subject to such punishment as the court may direct. This action is set forth in General Orders 167 of the War Department. The first case to arise at Camp Zachary Taylor of an enlisted man refusing to submit to a surgical operation has resulted in Major-Gen. Harry C. Hale, commander of the Eighty-Fourth (Lincoln) Division, appointing a board of medical officers to examine a private in the Quartermaster's Corps, Auxiliary Remount Depot No. 319, to determine if a surgical operation in his case is thought necessary to render him physically fit for service. The members of the board are Lieut.-Col. W. L. Pyles, Major J. H. McHenry, and Capt. Phillip Lewin. The examination will be conducted at the base hospital. Should the officers deem the operation necessary and the man still refuse to submit he will be liable to courtmartial proceedings. Since the opening of the cantonment a number of selects have been found to have ruptures or other ailments which interfered with their activities and duties as soldiers, but which were remedied by operations. Heretofore no complications arose over such situations, as the men willingly agreed to have their defects remedied.

PROPHYLACTIC ORDERS

A circular memorandum, issued from the office of the General Staff, advises every officer and man thus:

In this section of the country much of the war weather sickness is due to diseases transmitted by mosquitoes and flies. The mosquito and fly are both rapid breeders, and the destruction of one mosquito or fly at this time of the year is the prevention of millions by fall.

The following measures will be put into effect at once: Dense vegetation and underbrush will be cleared from the area pertaining to the unit. Mosquito bars will be drawn and held for use. Ditches will be cleared; areas impossible of drainage will be oiled with crude oil; water in fire buckets will be changed weekly.

Besides many other pointers given the command attention is called to fly traps: "requisition will be made for fly traps, and as soon as they are issued they will be used as follows: The large type will be kept just outside the kitchen and mess hall doors, at each table, picket line and corral, at each veterinary hospital, garbage, transfer station, and at other places where flies congregate in large numbers. The small type will be kept inside kitchens, mess halls, bakeries and infirmaries. Fly traps will be baited with molasses and vinegar, sugar, fish or any of the usually good baits. Raw fish is especially attractive to flies."

WHAT "TOTAL DISABILITY" IS

An interesting decision has arrived from the Bureau of War Risk Insurance as to what constitutes "total disability."

It says: "Any impairment of mind or body which renders it impossible for the disabled soldier to follow continuously any substantially gainful occupation shall be deemed to be total disability."

"Total disability shall be deemed to be permanent whenever it is founded on conditions which render it reasonably certain that it will continue throughout the life of the persons suffering from it. Whenever it shall be established that any person to whom any instalment of insurance has been paid as provided in Article 4 on the ground that the insured has become totally and permanently disabled, has recovered the ability to continuously follow any substantially gainful occupation the payments of installments of insurance shall be discontinued forthwith, and no further installments thereof shall be paid so long as such recovered ability shall continue."

PERSONAL

Dr. William O'Neil Sherman of Pittsburgh, who recently spent six months in France visiting the various war hospitals, paid the Three Hundred and Ninth Sanitary Train a visit and entertained and instructed all officers of the organization with a lecture on the treatment of burns and on Carrel-Dakin's treatment of infected wounds—Lieut.-Col. Luther R. Poust, assistant to the division surgeon, Lieut.-Col. John H. Allen, was granted an eight-day leave to go to the bedside of his mother, who is seriously ill at her home at Muncie, Pa.——Major Paul Fletcher has been relieved from duty with the Three Hundred and Ninth Sanitary Train at his own request, and will be assigned to the Medical Corps of the Three Hundred and Twenty-Fifth Field Artillery. He is succeeded by Major Bauker, who will be the director of the ambulance companies.

ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

To Birmingham, Ala., and *Savannah, Ga.,* for duty, and on completion *to his proper station,* Col. CLAUD K. MORGAN.

To Camp Colt, Gettysburg, Pa., *Aviation Supply Depot,* Middleton, Pa., and *Camp Crane,* Allentown, Pa., for sanitary inspection, and on completion *to his proper station,* Lieut.-Col. FRANK W. WEED.

To Camp Crane, Allentown, Pa., for duty, from Fort Oglethorpe, Lieut.-Col. JAMES F. HALL; from Camp Fremont, Lieut. FRANCIS M. FITTS.

To Camp Dix, Wrightstown, N. J., for duty, from New York City, Lieut. EGBERT H. WESSON.

To Camp Greene, Charlotte, N. C., for duty, from Camp Greene, Lieut. HAROLD E. CLARK.

To Camp Logan, Houston, Tex., for duty, from Camp Logan, Lieut. RICHARD S. MAGEE.

To Camp Sevier, Greenville, S. C., base hospital, from Camp Sevier, Lieut. ROBERT S. McGEACHY.

To Camp Sherman, Chillicothe, Ohio, *Camp Custer,* Battle Creek, Mich., and *Camp Meade,* Annapolis Junction, Md., for inspection, and on completion *to his proper station,* Lieut.-Col. WALTER E. PARKER.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Zachary Taylor, Lieut.-Cols. JOHN H. ALLEN, WILLIAM M. SMART.

To Curtis Bay, Md., for sanitary inspection, and on completion *to his proper station,* Col. WESTON P. CHAMBERLIN.

To Fort McPherson, Ga., for inspection, and on completion *to Fort Oglethorpe* for inspection, and on completion *to their proper stations,* Major-Gen. WILLIAM C. GORGAS; Col. EDWARD L. MUNSON.

To Fort Oglethorpe for inspection, and on completion *to Camp Jackson,* Columbia, S. C., for duty, and on completion *to his proper station,* Col. GEORGE E. BUSHNELL. For instruction, from Camp Beauregard, Capt. HORACE E. RUFF.

To Fort Sam Houston, Tex., as commanding officer of base hospital, from Douglas, Ariz., Major FREDERICK C. A. KELLAM.

To Hoboken, N. J., for special duty, and on completion *to Washington, D. C.,* Col. CHARLES LYNCH.

To New Haven, Conn., for inspection, and on completion *to his proper station,* Col. GEORGE E. BUSHNELL.

To Newport News, Va., for investigation, and on completion *to their proper stations,* Col. FREDERICK F. RUSSELL, Lieut.-Col. WARFIELD T. LONGCOPE. For examining tuberculosis cases, and on completion *to his proper station,* Lieut.-Col. EARL H. BRUNS.

To New York City for duty, and on completion *to his proper station,* Lieut.-Col. EDGAR KING.

To Philadelphia, Pa., for orthopedic instruction, and on completion *to Hoboken, N. J.,* for temporary duty, from Camp Logan, Lieut. NORMAN ZOLLS.

To report in person to the commanding general, Southern Department, for duty, from Fort Sam Houston, Major JOHN T. AYDELOTTE.

To San Diego, Calif., Signal Corps Aviation School, for duty, from Seattle, Lieut. GEORGE W. BEELER.

To Southern Field, Americus, Ga., *Camp Joseph E. Johnston,* Jacksonville, Fla., *Dorr Field,* and *Carlstrum Field,* Arcadia, Fla., *Fort Screven, Ga.,* and *Charleston, S. C.,* for sanitary inspection, and on completion *to his proper station,* Sr.-Surgeon JOSEPH H. WHITE.

To U. S. Army General Hospital, New Haven, Conn., *Watervliet Arsenal, N. Y., Disciplinary Barracks,* Fort Jay, N. Y., *U. S. Army General Hospital,* Williamsbridge, N. J., *Picatinni Arsenal, N. J., Camp Raritan, N. J., Camp Alfred Vail,* Little Silver, N. J., and *U. S. Army General Hospital,* Lakewood, N. J., for sanitary inspection, and on completion *to his proper station,* Lieut.-Col. FRANK W. WOOD.

To Washington, D. C., for consultation, and on completion *to his proper station,* Lieut.-Col. ALFRED P. UPSHUR.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. HUGH A. RODDEN.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Crane, Allentown, Pa., for temporary duty, Lieut. JULIAS W. McCALL, Montgomery.

To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Lieut. FLOYD L. ABERNETHY, Flomaton.

To Camp Sevier, Greenville, S. C., base hospital, from St. Louis, Lieut. GILBERT A. RHODES, Troy.

To Camp Sheridan, Montgomery, Ala., *Camp McClellan,* Anniston, Ala., *Camp Gordon,* Atlanta, Ga., and *Camp Wheeler,* Macon, Ga., for inspection, and on completion *to his proper station,* Major SEALE HARRIS, Birmingham.

To Camp Travis, Fort Sam Houston, Tex., base hospital, from Camp Travis, Lieut. ROBERT H. HOWARD, Tuskegee. For duty, Lieut. ALVIN E. BELDEN, Birmingham.

To Fort Bliss, Tex., for duty, from Camp Lee, Major BURR FERGUSON, Fairfield.

To Fort Oglethorpe for instruction, Lieuts. CLYDE W. GARMON, SIDNEY J. VANN, Birmingham; CHARLES M. PEARCE, Sweetwater.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Lieuts. JAMES H. DAVIS, Jasper; JAMES H. SENTELL, Swain; GEORGE W. HALL, Uniontown.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Camp Beauregard, Lieut. EUGENE THAMES, Mobile.

Resignation of Lieut. HENRY C. RILEY, Coffee Springs, accepted.

Arkansas

To Camp Pike, Little Rock, Ark., base hospital, Lieut. STERLING F. BOND, Little Rock.

To Fort Riley for instruction, Capt. WALTER O. PARRISH, Rector; Lieut. EDWARD W. POLLARD, Hughes.

California

To American Lake, Washington, for duty, Capt. CHARLES H. PARKER, Santa Cruz.

To Army Medical School for instruction, Lieut. MARION R. KING, Sacramento.

To Camp Doniphan, Fort Sill, Okla., base hospital, from Fort Winfield Scott, Capt. ARTHUR H. REINSTEIN, San Francisco.

To Camp Fremont, Palo Alto, Calif., base hospital, from Alcatras, Capt. DANIEL L. HUMFREVILLE, Los Angeles. As orthopedic surgeon, from Los Angeles, Lieut. FRANK J. BRESLIN, Los Angeles.

To Camp Kearny, Linda Vista, Calif., as orthopedic surgeon, from Los Angeles, Lieuts. ARNOLD M. SCHOLZ, Los Angeles; JOHN E. PAULSON, San Quentin. Base hospital, from Los Angeles, Lieut. LOUIS E. COY, San Bernardino.

To Camp Lee, Petersburg, Va., base hospital, from Fort Sam Houston, Major FREDERICK P. GAY, Berkeley.

To Camp Lewis, American Lake, Wash., as orthopedic surgeon, from Los Angeles, Lieut. STUART Z. PEOPLES, Petaluma.

To Camp Sheridan, Montgomery, Ala., base hospital, from Camp Kearny, Lieut. LOWELL C. FROST, Beverley Hills.

To Columbia, S. C., for duty, and on completion *to his proper station,* Major WILBUR A. SAWYER, Berkeley.

To Fort McDowell, Calif., for duty, from Camp Lewis, Lieut. MARIUS A. FRANCOZ, San Francisco.

To Fort Riley for instruction, Lieuts. BARTHOLOMEW GATTUCCIO, Davenport; LESTER C. SCULLY, San Jose; from Los Angeles, Lieuts. WALTER C. S. KOEBIG, JAMES H. McLAUGHLIN, CHARLES S. YOUNG, Los Angeles; CHARLES A. WARMER, Ontario; JOSEPH W. CRAWFORD, Sacramento; RALPH M. SMITH, San Bernardino; JOSEPH J. KAVANAGH, San Francisco.

To Newport News, Va., for duty, from Fort Sam Houston, Major JAMES G. CUMMING, Berkeley.

To San Diego, Calif., Rockwell Field, Signal Corps Aviation School, from Los Angeles, Lieut. CHARLES G. STIVERS, Los Angeles.

Honorably discharged Lieut. WILLIAM A. TARLETON, Los Angeles.

Colorado

To Fort Riley, base hospital, and on completion *to Fort Riley,* for temporary duty, from Fort Riley, Capt. VICTOR B. AYERS, Buena Vista. For instruction, Lieut. LANNING E. LIKES, Lamar.

Honorably discharged on account of physical disability incurred in line of duty, Lieut. DANIEL B. RILEY, Ignacio.

Letter directing Capt. CYRUS L. PERSHING, Denver, *to Camp Cody* from New York City, revoked.

Connecticut

To Camp Jackson, Columbia, S. C., as member of the tuberculosis examining board from Camp Greene, Lieut. THOMAS P. MURDOCK, Meriden. Base hospital, Lieut. ELMER T. SHARPE, Derby.

To Camp Upton, Long Island, N. Y., base hospital, Lieut. EDWARD J. WHALEN, Hartford.

To Fort Oglethorpe for instruction, Lieuts. THADDEUS S. SKLADZIEN, Meriden; CARLTON K. HEADY, Milford.

To Hoboken, N. J., for duty, Lieut. EDMUND SPICER, Waterbury.

District of Columbia

To Camp Lee, Petersburg, Va., base hospital, Major JAMES F. MITCHELL, Washington.

To Camp Meade, Annapolis Junction, Md., base hospital, from Camp Meade; Major SCOTT D. BRECKINRIDGE, Washington.

To Fort Oglethorpe for instruction, Capt. LOUIS C. ECKER, Lieut. JOSEPH I. WOISARD, Washington.

To Fort Riley, base hospital, from Camp Travis, Major JOSEPH M. HELLER, Washington.

To Hoboken, N. J., for duty, Lieut. EDGAR SNOWDEN, Washington.

To Philadelphia, Pa., for duty, and on completion *to his proper station,* Major CHARLES W. RICHARDSON, Washington.

Florida

To Camp Gordon, Atlanta, Ga., engineer service battalions, Capt. JOHN S. TURBERVILLE, Century.

To Fort Oglethorpe for instruction, Lieut. JOHN B. BLACK, Jacksonville.

To Hoboken, N. J., for duty, from Fort Oglethorpe, Capt. GEORGE E. ATWOOD, Bocagrande.

To Rockefeller Institute for instruction, and on completion *to Bellevue Hospital*, New York City, for instruction, and on completion *to Camp Logan*, Houston, Tex., base hospital, from Fort Oglethorpe, Capt. FRANK F. FERRIS, Apalachicola.

Georgia

To Camp Dodge, Des Moines, Ia., as assistant to camp surgeon, from Fort Oglethorpe, Lieut. SIDNEY H. JACOBS, Atlanta.

To Camp Gordon, Atlanta, Ga., for duty, Lieuts. ROY H. BRYANT, Calhoun; THOMAS J. BLACKSHEAR, JR., Dublin; JAMES M. TRIBBLE, Senoia; from Camp Wadsworth, Lieut. HOMER M. DANIEL, Middleton.

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. MYRON H. FARMER, Newman.

To Camp Pike, Little Rock, Ark., for duty, from Fort McPherson, Capt. WILLIAM N. ADKINS, Atlanta; from Fort Oglethorpe, Lieut. GROVER C. GAMBRELL, Rutledge.

To Camp Shelby, Hattiesburg, Miss., for duty, from Camp Sevier, Capt. EDWARD M. COLEMAN, Athens.

To Camp Travis, Fort Sam Houston, Tex., for duty, Lieuts. JAMES G. HALL, Atlanta; WILLIAM H. HADAWAY, La Grange.

To Camp Wheeler, Macon, Ga., for duty, from duty as a private at Camp Wheeler, Lieut. EUGENE F. SANFORD, Buchanan.

To Fort Oglethorpe for instruction Capt. HENRY W. S. HAYES, Lieuts. JAMES E. CORRY, Atlanta; SMITH W. RAY, Jeffersonville; ARTHUR B. PRINCE, Kingsland; JACOB J. ROSS, Mount Berry; PAUL J. PENISTON, Newman; from Camp Hancock, Lieut. FRANCIS C. NESBIT, Waycross.

Idaho

To Fort Riley for instruction, Capt. LOUIS J. PERKINS, Lewiston; Lieuts. JAMES F. MILLER, Inkom; OWEN D. PLATT, St. Maries.

Illinois

To Camp Crane, Allentown, Pa., for temporary duty, Lieuts. HARVEY W. TUPPER, Nokomis; CHARLES L. DAVIS, Robinson.

To Camp Custer, Battle Creek, Mich., to examine the command for mental and nervous diseases, from Fort Riley, Lieut. JOS. C. KACZKOWSKI, Chicago.

To Camp Devens, Ayer, Mass., for duty, Lieut. GEORGE C. STIMPSON, Quincy.

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. FRED W. GAARDE, Chicago.

To Camp Gordon, Atlanta, Ga., for duty, from Williamsbridge, Lieut. FRANK S. DI COSOLA, Chicago.

To Camp Hancock, Augusta, Ga., base hospital, Lieut. MARTIN B. JELLIFFE, Chicago.

To Camp Jackson, Columbia, S. C., as member of tuberculosis examining board, from Fort Oglethorpe, Capt. THOMAS A. HOGAN, Chicago.

To Camp Kelly, San Antonio, Tex., for duty, from Austin, Tex., Lieut. GEORGE O. CULLI, Ina.

To Camp McClellan, Anniston, Ala., base hospital, Lieut. EDWARD P. BERG, JR., Chicago.

To Camp Meade, Annapolis Junction, Md., as member of tuberculosis examining board, from Fort Oglethorpe, Lieut. JOHN F. GRANT, Chicago.

To Camp Pike, Little Rock, Ark., as member of the tuberculosis examining board, from Camp Greene, Lieut. JOSEPH C. BROOKHART, Greenup. Base hospital, from Camp Pike, Lieut. OSCAR HOUSE, De Sota. For duty, Lieut. JOHN E. CLARK, Streator.

To Camp Shelby, Hattiesburg, Miss., base hospital, from Philadelphia, Capt. EDSON B. FOWLER, Chicago; from St. Louis, Lieut. EMOR L. CARTWRIGHT, Chicago; from Fort Oglethorpe, Lieut. REZIN P. JOHNSON, Chicago.

To Camp Travis, Fort Sam Houston, Tex., for duty, Lieut. K. FRANCIS H. GBURCZY, Joliet.

To Camp Wheeler, Macon, Ga., base hospital, Lieut. PAUL BLACK, Greenup.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Camp Zachary Taylor, Capt. WILLIAM R. LARKIN, Chicago.

To Canal Zone, Panama Canal Dept., for duty, from Army Medical School, Capt. FREDERICK LUDWIG, Great Lakes.

To Chicago, Ill., for instruction, in orthopedic surgery, Lieut. EDWARD HANS, Chicago.

To Fort Adams, R. I., Coast Defenses of Narragansett Bay, from Fort Oglethorpe, Capt. ALBERT A. ANKENBRANDT, Mt. Carmel.

To Fort Des Moines, Ia., base hospital, from Fort Oglethorpe, Capt. WILLIAM W. COLEMAN, Lincoln; from Fort Riley, Lieut. JESSE O. BAILIFF, Chicago.

To Fort Oglethorpe for instruction, Capt. ELMER H. BEST, Freeport; Lieuts. CALVIN M. DEBECK, ARTHUR S. SANDLER, Chicago; from Camp Wadsworth, Lieut. ORVAN A. PHIPPS, Toledo. Base hospital and on completion *to Camp Sheridan*, Montgomery, Ala., base hospital, from Fort Oglethorpe, Lieut. GEORGE E. ARZT, Chicago.

To Fort Riley for instruction, Capt. DARWIN B. POND, Chicago; Lieuts. JOSEPH A. PINCKARD, Atwood; FRANK DEASON, Bush; EUGENE J. CHESROW, WILLIAM W. DICKEY, HENRY KRUSE, NATHAN D. LEVITON, IRVING A. PORGES, Chicago; GEORGE P. GILL, Rockford. Base hospital and on completion *to Camp Bowie*, Fort Worth, Tex., base hospital from Fort Riley, Lieut. ALVA E. McREYNOLDS, Peoria.

To Fort Sheridan, Ill., hospital train for duty, from Hoboken, for duty, from Hoboken, Lieut. CORWIN S. MAYES, Illiopolis.

To Harrisburg, Pa., for duty, and on completion *to his proper station*, Major HARRY E. MOCK, Chicago.

To Hoboken, N. J., for duty, Major CHARLES L. MIX, Chicago. On completion *to his proper station*, Major PAUL B. MAGNUSON, Chicago.

To Medical and Reserve Officers' Training Camps, Fort Oglethorpe, *Army Reorganization Camp*, Chickamauga Park, Ga., *U. S. Army General Hospital*, Fort Oglethorpe, *Camp Forrest*, Chickamauga Park, Ga., and *U. S. Army General Hospital*, Fort McPherson, Ga., for conference, and on completion *to his proper station*, Major SANGER BROWN, Chicago.

To Mineola, Long Island, N. Y., Hazelhurst Field, Capt. FRANK CARY, Chicago.

To New York City, Cornell Medical College, for instruction in military roentgenology, from Camp Gordon, Lieut. FRED McK. MILLER, Chicago.

To Philadelphia, Pa., for instruction in orthopedic surgery, from Camp Gordon, Lieut. PERCY P. HASLITT, Marshall.

To Pittsburgh, Pa., Carnegie Institute of Technology, for duty, from Army Medical School, Lieut. ERNEST J. WORTHINGTON, Olney.

To Richmond, Va., for duty, and on completion *to his proper station*, Major JOHN A. HORNSBY, Chicago.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. WILLIAM R. WESENBERG, Mound City.

Resignation of Lieut. NORMAN W. CONNAWAY, Sheridan, accepted.

The following orders have been revoked: *To Camp Zachary Taylor*, Louisville, Ky., from Camp Custer, Capt. PAUL E. BAIN, Pleasant Plains. *To Fort Riley* for instruction, Capts. LOUIS A. GREENSFELDER, ROGER T. VAUGHAN, Chicago.

Indiana

To Camp Crane, Allentown, Pa., for temporary duty, Capt. HENRY O. BRUGGEMAN, Fort Wayne.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. JAY H. GRIMES, Danville.

To Camp Dodge, Des Moines, Ia., base hospital, Capt. GEORGE H. PENDLETON, Indianapolis.

To Camp Jackson, Columbia, S. C., as a member of a board examining the command for tuberculosis, from Fort Oglethorpe, Lieut. CHARLES F. VOIGT, New Albany.

To Camp McClellan, Anniston, Ala., base hospital, Lieut. HARVEY H. MARTIN, LaPorte.

To Camp Sherman, Chillicothe, Ohio, as member of the tuberculosis examining board, from Camp Forrest, Lieut. JAMES F. HATFIELD, Walton.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from Camp Zachary Taylor, Capt. HAROLD B. COX, Morristown.

To Fort Oglethorpe for instruction, Lieuts. MILES F. PORTER, JR., Fort Wayne; CHARLES L. AMICK, Wakarusa; from Camp Travis, Capt. MANFORD M. CLAPPER, LaFayette.

To Hoboken, N. J., for duty, Lieut. BRUCE D. HART, South Whitley, from Fort Oglethorpe, Lieut. DUFFIELD D. MACGILLIVRAY, Pine Valley.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. CARL L. SOUDERS, Columbia City.

Iowa

To Camp Dodge, Des Moines, Ia., for duty, from Camp Dodge, Lieut. THOMAS N. TOOMEY, Iowa City.

To Camp Gordon, Atlanta, Ga., for duty, from Army Medical School, Lieut. HARRY F. KIESLING, Dayton.

To Camp Lee, Petersburg, Va., base hospital, from Fort Sam Houston, Lieut. FRANKLIN A. STEVENS, Belmont.

To Camp Travis, Fort Sam Houston, Tex., for duty, Capt. EMIL O. FICKE, Davenport.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from St. Louis, Lieut. CHARLES E. MOORE, Newton.

To Fort Des Moines, Ia., base hospital, for temporary duty, Capt. FRED F. AGNEW, Independence.

To Fort Oglethorpe, base hospital, and on completion *to Camp Grant*, Rockford, Ill., base hospital, from Fort Oglethorpe, Lieut. JAMES E. EDGINGTON, Washington. For instruction, from Fort Riley, Lieut. GEORGE S. BAWDEN, Davenport; from Morrison, Va., Lieut. GEORGE A. BEMIS, Garner.

To Fort Riley as assistant to the the division surgeon, from Camp Grant, Capt. JAMES J. DALY, Decorah. Base hospital, and on completion to Camp Doniphan, Fort Sill, Okla., base hospital, from Fort Riley, Lieut. ROY C. JACKSON, Independence. For duty, from Ann Arbor, Lieut. LOVE E. PENNINGTON, Cherokee. For instruction, Lieuts. ROY R. MILLER, Keota; LEONARD J. BOWMAN, Masonville; IRWIN J. SINN, Williamsbridge.

To Mineola, Long Island, N. Y., Hazelhurst Field, for duty, from Camp Kelly, Lieut. MURDOCH BANNISTER, Ottumwa.

To report by wire to the commanding general, Western Department, for duty, from Camp Kearny, Lieut. CHARLES G. BAIRD, Cedar Rapids.

Kansas

To Buffalo, N. Y., Broadway Auditorium, for duty, from Fort Oglethorpe, Lieut. ROBERT C. DAVIS, Kansas City.

To Camp Dodge, Des Moines, Ia., for duty, from Camp Doniphan, Lieut. EDWARD K. LAWRENCE, Great Bend.

To Fort Riley for instruction, Capt. C. FREMONT CHONK, Anthony; Lieuts. EUGENE J. BRIBACH, Atchison; JOHN R. CAMPBELL, Coats.

Honorably discharged, Lieut. THOMAS M. GREENWOOD, Circleville.

Letter directing Lieut. WALTER P. STOLTENBERG, Kinsley, to *Camp Bowie*, revoked.

Kentucky

To Army Medical School for instruction, Lieut. WILLIAM P. FOREMAN, Corinth.

To Camp A. A. Humphreys, Accotink, Va., for duty, from Fort Oglethorpe, Lieut. MASTIN L. PIPES, Moreland.

To Camp Colt, Gettysburg, Pa., camp hospital, from Camp Colt, Lieut. JAMES M. MORRIS, Chestnutberg.

To Camp Crane, Allentown, Pa., for temporary duty, Lieut. ISAAC J. HOOVER, Owensboro.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieuts. LEE ROSE, Cedarville; LORENZO O. SMITH, Williamsburg.

To Camp Dodge, Des Moines, Ia., for duty, from Camp Doniphan, Lieut. JOHN E. SILER, Lot.

To Camp Gordon, Atlanta, Ga., for duty, from Camp Joseph E. Johnston, Lieut. THOMAS R. COLLIER, Louisville, from Fort Oglethorpe, Lieut. HENRY D. BERRYMAN, Anchorage.

To Camp Grant, Rockford, Ill., base hospital, Major BENJAMIN F. VAN METER, Lexington.

To Camp MacArthur, Waco, Tex., for duty, from Camp MacArthur, Lieut. LEONARD CHAMPION, Cadiz.

To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Lieut. JAMES A. GRIDER, Smiths Grove.

To Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. JOHN B. JAMESON, Louisville; from Camp Bowie, Major IRWIN ABELL, Louisville; Capts. JOHN T. PRICE, Harrodsburg; HUGH E. PRATHER, Hickman; AMPLIAS W. DAVIS, Morton's Gap; from New Orleans, Lieut. CARL E. ABELL, Louisville.

To Camp Zachary Taylor, Louisville, Ky., base hospital, Major GRANVILLE S. HANES, Louisville; from Camp Zachary Taylor, Lieut. CLAUDE WILSON, Greenville.

To Edgewood, Md., base hospital, from Camp Travis, Major FRANK T. FORT, Louisville.

To Fort Oglethorpe for instruction, Lieut. THOMAS H. NELSON, Covington.

To Fort Riley, base hospital, from St. Louis, Lieut. CLAUDE B. NEIDHAMER, Sturgis. On completion *to Camp MacArthur*, Waco, Tex., base hospital, from Fort Riley, Lieut. BONAPARTE P. DAVIS, Woodburn. For instruction, Lieut. CLIVE A. MOSS, Williamsburg.

To Hoboken, N. J., for duty, Lieut. JAMES DER. STEWART, Dundee; from Fort Oglethorpe, Lieut. JOSEPH A. SLEET, Frankfort. Hospital train, Lieut. EDWARD B. WILLINGHAM, Paducah.

To Rochester, N. Y., for duty, from Fort Oglethorpe, Lieuts. ISAAC L. WYATT, Buffalo; JOHN E. HAHS, La Center.

Honorably discharged, Lieut. WILLIAM H. SMITH, Louisville. On account of physical disability existing prior to entrance into the service, Lieut. PATTERSON T. FRASER, Jr., Cadiz.

Louisiana

To Camp Beauregard, Alexandria, La., base hospital, Capt. ARTHUR I. WEIL, New Orleans; from Fort Oglethorpe, Lieut. PRESSLEY A. KIBBE, Erath.

To Camp Crane, Allentown, Pa., for temporary duty, Lieut. GEORGE A. CRONAN, New Orleans.

To Camp Gordon, Atlanta, Ga., as member of the tuberculosis examining board, from Camp Greene, Capt. DELANE S. CALHOUN, Ruston. For duty, Lieut. LABASSE J. ROBIN, New Orleans.

To Camp Travis, Fort Sam Houston, Tex., for duty, Lieut. CHARLES E. VERDIER, New Orleans.

To Fort Oglethorpe, base hospital, and on completion *to Camp Greene*, Charlotte, N. C., base hospital, from Fort Oglethorpe, Lieut. GEORGE H. UPTON, New Orleans. On completion *to Camp Upton*, Long Island, N. Y., base hospital, from Fort Oglethorpe, Lieut. RUFUS H. FISHER, Sulphur. Hospital train, Lieuts. JOSEPH F. CAZAYAUX, New Roads; WILLIAM L. STEWART, Pollock.

The following orders have been revoked: *To Camp MacArthur* from Fort Oglethorpe, Lieut. MILTON W. TALBOT, Fullerton; *to Camp Pike* from Fort Oglethorpe, Lieut. ISIDORE B. ROUGON, Shreveport.

Maine

To Camp Upton, Long Island, N. Y., for duty, from Canal Zone, Capt. LESTER B. ADAMS, Bangor.

To Fort Oglethorpe for instruction, Capt. ARTHUR W. WHITE, Portland; Lieut. CHARLES B. SYLVESTER, Harrison.

To Hoboken, N. J., for duty, Capt. CALVIN M. THOMAS, Brewer.

Maryland

To Camp Crane, Allentown, Pa., for temporary duty, Major ARTHUR M. SHIPLEY, Lieut. ADAM W. REIER, Baltimore.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. FRANCIS E. JAMESON, Newport.

To Camp Hancock, Augusta, Ga., base hospital, Lieut. MOSES RASKIN, Baltimore.

To Camp Jackson, Columbia, S. C., base hospital, from Fort Oglethorpe, Lieut. JAY H. STIER, Perryman.

To Camp Lee, Petersburg, Va., for duty, from Fort Oglethorpe, Major NEWDIGATE M. OWENSBY, Baltimore. Base hospital, from Fort Sam Houston, Lieut. THOMAS M. RIVERS, Baltimore.

To Camp Meade, Annapolis Junction, Md., base hospital, Lieut. ROY A. WOLFORD, Baltimore; from Camp Meade, Lieut. PURNELL F. SAPPINGTON, Bel Air.

To Hoboken, N. J., for duty, Lieuts. HENRY F. J. BUETTNER, NOLAN D. C. LEWIS, Baltimore.

To Rockefeller Institute for instruction, and on completion *to his proper station*, from Fort Slocum, Capt. ANTON C. SORENSON, Baltimore.

To Washington, D. C., Government Hospital for the Insane, for intensive training, Lieut. FRANK N. OGDEN, Baltimore.

To the inactive list, from Camp Hancock, Lieut. VERNON S. WILKINSON, Aberdeen.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. JOHN C. NORTON, Baltimore.

Massachusetts

To Army Medical School for instruction, Lieut. EDWARD W. YOUNG, New Bedford.

To Boston, Mass., Howard Graduate School of Medicine, for duty and on completion *to his proper station*, Major ALEXANDER S. BEGG, Cambridge.

To Brooklyn, N. Y., base hospital, from Camp Meade, Lieut. BERNARD A. GODVIN, Boston.

To Camp Beauregard, Alexandria, La., base hospital, Major GEORGE H. GRAY, Lynn.

To Camp Crane, Allentown, Pa., base hospital, from Newport News, Lieut. JAMES H. GETTINGS, Boston.

To Camp Dix, Wrightstown, N. J., base hospital, Lieut. RALPH H. HOPKINS, Marlon.

To Camp Greene, Charlotte, N. C., base hospital, from Boston, Major JOSHUA C. HUBBARD, Boston.

To Camp Jackson, Columbia, S. C., base hospital, Lieut. JACOB E. BANQUER, Boston.

To Camp McClellan, Anniston, Ala., as division psychiatrist, from Camp McClellan, Capt. DONALD R. GILFILLAN, Worcester; as orthopedic surgeon, from Fort Oglethorpe, Lieut. HARRIS E. POWERS, Boston.

To Camp Shelby, Hattiesburg, Miss., base hospital, Lieut. ARTHUR N. BALL, Northampton.

To Camp Wheeler, Macon, Ga., base hospital, Major ALEXANDER QUACKENBOSS, Boston.

To Camp Zachary Taylor, Louisville, Ky., as division psychiatrist, from Camp McClellan, Capt. WALTER J. OTIS, Waverley.

To Fort Oglethorpe for instruction, Capts. BERTRAND H. HOPKINS, Ayer; PEREZ B. HOWARD, Newtonville; Lieuts. WOLFERT G. WEBBER, Boston; DEODATUS T. CHAGNON, Holyoke; SAMUEL BUTLER, Medway; JULIAN D. LUCAS, Roxbury.

To Hoboken, N. J., for duty, Lieut. FRANCIS M. RACKEMANN, Boston.

To Rockefeller Institute for instruction in bacteriology, and on completion *to Army Medical School* for duty, Capt. ARTHUR M. WORTHINGTON, Dedham. For instruction in laboratory work, and on completion *to Army Medical School*, for duty, Lieut. HAROLD F. BUDINGTON, Springfield.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from Camp Grant, Capt. JOHN BRYANT, Boston.

Letter directing Lieut. HARRY R. COBURN, Tewksbury, *to Philadelphia* from Fort Oglethorpe, revoked.

Michigan

To Camp Beauregard, Alexandria, La., base hospital, Lieut. ROLLA G. KARSHNER, Ann Arbor.

To Camp Devens, Ayer, Mass., for duty, Lieut. HAROLD F. OHRT, Detroit.

To Camp Dodge, Des Moines, Ia., for duty, from Camp Doniphan, Lieut. COLIN C. VARDAN, Detroit.

To Camp Gordon, Atlanta, Ga., for duty, from Army Medical School, Lieut. ZINA B. BENNETT, Detroit, from Williamsbridge, Lieut. CUTHBERT E. DEMAY, Jackson.

To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Major SAMUEL E. CRUSE, Iron Mountain.

To Camp Travis, Fort Sam Houston, Tex., for duty, from Fort Oglethorpe, Capt. ROBERT B. HARKNESS, Houghton.

To Fort Logan H. Roots, Ark., base hospital, from Camp Lee, Major FRANK SUGGS, Detroit.

To Fort Oglethorpe base hospital, and on completion *to Camp Shelby*, Hattiesburg, Miss., base hospital, from Fort Oglethorpe, Capt. NELSON MacARTHUR, Detroit. For instructions, Lieuts. WILLIAM J. KANE, Detroit; PERRY C. ROBERTSON, Ionia.

To Fort Riley, base hospital, and on completion *to Camp Logan*, Houston, Tex., base hospital, from Fort Riley, Capt. WILLIAM H. DUNHAM, Spaltsburg. For instruction, Lieuts. SETH E. GILKEY, ARTHUR TURNER, Detroit.

To Fort Wayne, Mich., for duty, Major WILLIAM F. ENGLISH, Saginaw; Lieut. CHARLES S. STRAIN, Rochester.

To Hoboken, N. J., for duty, Lieuts. ALBA L. SMITH, LINDLEY H. STOUT, Detroit. Hospital train, Lieut. ROBERT J. WALKER, Saugatuck.

To Rockefeller Institute for instruction, and on completion to Williamsbridge, N. Y., for temporary duty, from Camp Grant, Capt. WILLARD H. HUTCHINGS, Detroit.

Honorably discharged on account of physical disability incurred in the line of duty, Capt. EARL M. McCOY, Grandlodge. On account of physical disability existing prior to entrance into the service, Lieut. LEO C. DONNELLY, Detroit.

Resignation of Lieut. JOSEPH A. FLEISCHMANN, Muskegon, accepted.

Minnesota

To Camp Crane, Allentown, Pa., for temporary duty, Lieut. ADOLPH M. HANSON, Dawson.

To Camp Fremont, Palo Alto, Calif., for duty, from Camp Kearny, Lieut. WILLIAM W. MOIR, Minneapolis.

To Fort Riley for instruction, Capt. JENNER P. CHANCE, International Falls.

To Fort Sheridan, Ill., hospital train, Lieuts. PETER C. BJORNEBY, Bagley; JOHN T. RIESS, Pine City.

To Hoboken, N. J., for temporary duty, from Fort Sam Houston, Lieut. FRANCIS G. BLAKE, Minneapolis.

To Minneapolis, Minn., for duty, from University of Minnesota, Capt. ALOYSIOUS S. FLEMING, Minneapolis.

To Rockefeller Institute for instruction, and on completion *to his proper station*, from Williamsbridge, Capt. RALPH T. KNIGHT, Minneapolis. On completion *to Camp Upton*, Long Island, N. Y., base hospital, Lieut. EDWARD V. M. MASTIN, Rochester.

To Washington, D. C., for duty in the Surgeon-General's Office, Major WILLIAM J. MAYO, Rochester.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. BENJAMIN J. SHALETT, Minneapolis.

The following orders have been revoked: *To Fort Riley*, from Camp Logan, Lieut. VIRGIL H. MOATS, Minneapolis. *To Philadelphia, Pa.*, from Rockefeller Institute, Capt. FRANK M. MANSON, Worthington.

Mississippi

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. VIRGIL N. NICHOLS, Carson.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. FILO B. COATS, Hardy Station.

To Fort Oglethorpe for instruction, Lieuts. JOHN W. McCLAIN, Columbus; SILAS W. PEARSON, Louisville; JAMES A. McDEVITT, Shubuta.

To Rochester, N. Y., for duty, from Fort Oglethorpe, Lieut. MARTIN L. HOLLAND, Schlater.

Missouri

To Camp Dodge, Des Moines, Ia., for duty, from Camp Doniphan, Lieut. GROVER C. JOHNSON, Belle.

To Camp Jackson, Columbia, S. C., as member of the tuberculosis examining board, from Camp Greene, Capt. FREDERICK B. SPENCER, Hannibal.

To Camp Sherman, Chillicothe, Ohio, as orthopedic surgeon, from Fort Oglethorpe, Lieut. HENRY L. HESS, Kansas City. Base hospital, from St. Louis, Lieut. GEORGE W. HEUMAN, St. Louis.

To Camp Travis, Fort Sam Houston, Tex., for duty, Lieut. WALTER R. LIMBAUGH, Hollywood.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from St. Louis, Capt. ROBERT G. HALL, Fulton.

To Fort Leavenworth, Kan., for duty, Lieut. HORACE F. CLEVELAND, St. Louis.

To Fort Oglethorpe for instruction, Lieut. JAMES L. DOWNING, Lexington.

To Fort Riley for instruction, Capt. HENRY A. MAY, Washington; Lieuts. WILLIAM T. EUDY, Birch Tree; MARCUS R. DAMRON, DeWitt; CHARLES N. HAHN, Dunnegan; ERNEST MITCHELL, LaMonte; HORACE A. SHEPHERD, Moscow Mills; JAMES K. RESSON, Pascola; HENRY T. O'KELLEY Patton; JAMES E. PIERPOINT, Skidmore.

To Kansas City, Mo., Sweeney Auto School, to make physical examinations and give medical attention to the drafted men to be enrolled at this institution, the same duty at Rahe Auto and Tractor School, and on completion to the inactive list, Capt. ROGER B. BREWSTER, Kansas City.

To Rockefeller Institute for instruction, and on completion to Bellevue Hospital, New York City, for further instruction, and on completion *to Camp Hancock*, Augusta, Ga., base hospital, from Fort Riley, Capt. WILLIAM T. ELAN, St. Joseph.

To St. Louis, Mo., for duty, Major HANAU W. LOEB, St. Louis.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. JOHN W. WILLIAMS, Nashville.

Letter directing Lieut. ROY W. JOHNSON, St. Louis, *to Hoboken*, from Fort Oglethorpe, revoked.

Montana

To Fort Riley for instruction, Capt. AUSTIN L. WARD, Havre; Lieut. JAMES D. HOBSON, Missoula.

To Fort Sam Houston, Tex., for temporary duty, from Fort Riley, Capt. SAMUEL G. ARNOLD, Billings.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. CORNELIUS B. BOYLE, Eureka.

Nebraska

To Camp Dodge, Des Moines, Ia., for duty, from Camp Doniphan, Lieuts. LESLIE B. CRUMBINE, Lincoln; CHARLES C. WALLINGSFORD, Ogallala.

To Camp Pike, Little Rock, Ark., for duty, Lieuts. JAMES MACWOODWARD, Lincoln; BERNARD V. McDERMOTT, Stuart.

To Camp Travis, Fort Sam Houston, Tex., for duty, from Fort Riley, Lieut. WARREN M. PHILLIPS, Norfolk.

To Camp Zachary Taylor, Louisville, Ky., as assistant to camp surgeon, from Fort Riley, Lieut. WILLIAM E. M. DEVERS, Cowles.

To Fort Des Moines, Ia., base hospital, Major EDSON L. BRIDGES, Omaha.

To Fort Omaha, Neb., for duty, from Omaha, Capt. ADOLPH B. LINDQUEST, Omaha.

To Fort Riley for instruction, Capt. FRANK D. BURGESS, Cedar Rapids; Lieuts. HENRY B. BOYDEN, Grand Island; JOSEPH B. SCHROCK, Scottsbluff.

Nevada

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. CHARLES W. R. VON RADESKY, Carson City.

New Hampshire

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. LAURENCE B. HATCH, E. Jaffrey.

To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Lieut. SAMUEL D. SNOW, North Conway.

To Fort Oglethorpe for instruction, Lieut. GEORGE A. TREDICK, Portsmouth.

New Jersey

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. VANE B. SIGLER, Trenton.

To Camp Dix, Wrightstown, N. J., base hospital, Lieut. THOMAS W. PHILLIPS, Camden.

To Camp Shelby, Hattiesburg, Miss., base hospital, Capt. ELIAS J. MARSH, Paterson.

To Fort Oglethorpe for instruction, Capt. JOSEPH T. WELCH, Long Branch; Lieuts. ADOLPH A. GURIN, Atlantic City; LOUIS LIPSHITZ, Bayonne; LAWRENCE M. COLLINS, Greystone Park; WALTER H. WHITON, Neshanic; JOSEPH A. SCHRAMM, Newark; JESSE A. LEVINE, Orange; ALBERT G. JAHN, Passaic; ALEXANDER J. McRAE, Upper Montclair; HENRY KLAUS, West Hoboken.

To Fort Sheridan, Ill., base hospital, from Hoboken, N. J., Lieut. ADFUR E. MAINES, Jersey City.

To Hoboken, N. J., for duty, Capt. CHARLES D. PEDRICK, Glassboro; Lieuts. BENJAMIN F. SLOBODIEN, Perth Amboy; JOHN H. WINSLOW, Vineland.

To Jackson Barracks, La., for duty, from Camp Greene, Lieut. ERNEST S. RAMSDELL, Camden.

To Mineola, Long Island, N. Y., Hazelhurst Field, for duty, from the Surgeon-General's Office, Major STEWART PATON, Princeton.

To Rockefeller Institute for instruction in laboratory work, and on completion *to Army Medical School*, for duty, Lieut. LOUIS C. ROSENBERG, Newark.

New Mexico

To Camp Hancock, Augusta, Ga., base hospital, from Walter Reed General Hospital, Lieut. SAMUEL H. ECKLES, Silver City.

To Camp Travis, Fort Sam Houston, Tex., field artillery brigade, Lieut. BURRIS B. McGEE, Elida.

To Fort Riley for instruction, from Fort Leavenworth, Lieut. NATHANIEL D. FRAZIN, Tyron.

Letter directing Lieut. WILLIAM G. BASSETT, Des Moines, Ia., *to Fort Riley* for instruction, revoked.

New York

To Army Medical School for instruction Lieuts. FRANK A. TRIPPE, Fredonia; MARK COHN, MOSES LOBSENZ, New York City.

To Baltimore, Md. Philadelphia, Pa., Trenton, Newark, Paterson and *Hoboken, N. J., New York City, Brooklyn, N. Y., Hempstead, Garden City, Mineola* and *Riverhead, Long Island, N. Y., Patchogue, N. Y., Lowell, Boston* and *Ayer, Mass.*, for inspection, and on completion *to his proper station*, Capt. ALEX N. THOMSON, Brooklyn.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort McPherson, Lieut. JOHN F. HOLDEN, White Plains.

To Camp A. A. Humphreys, Accotink, Va., for duty, from Newport News, Major ARTHUR S. MOORE, Middletown.

To Camp Cody, Deming, N. M., base hospital, from Fort Oglethorpe, Lieut. ISADORE M. LEAVY, New York City.

To Camp Crane, Allentown, Pa., for temporary duty, Lieut. ROSCOE C. WEBB, New York City.

To Camp Devens, Ayer, Mass., base hospital, Lieut. ARTHUR P. STOUT, New York City; from Camp Dix, Lieut. SAUL DANZER, Brooklyn.

To Camp Dix, Wrightstown, N. J., *Camp McClellan*, Anniston, Ala., *Camp Gordon*, Atlanta, Ga., and *Camp Sevier*,, Greenville S. C., for temporary duty, and on completion *to his proper station*, Capt. BERNARD S. OPPENHEIMER, New York City. *To Camp Dix* to examine the command for mental and nervous diseases, Lieut. SAMUEL W. MILLER, JR., New York City.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. ALFRED E. OAKES, Tarrytown; from Army Medical School, Lieut. RALPH I. LEVY, New York City; from Williamsbridge, Lieuts. FRANK KRUSE, CHARLES C. PANZARELLA, Buffalo.

To Camp Greene, Charlotte, N. C., for duty, from Camp Upton, Capt. GEOFFREY C. H. BURNS, Central Islip.

To Camp Hancock, Augusta, Ga., base hospital, from New York City, Lieut. BENJAMIN E. CARMEL, Brooklyn.

To Camp Jackson, Columbia, S. C., as member of the tuberculosis examining board, from Camp Forrest, Capts. STANMORE L. CASH, New York City; STEPHEN A. MAHADY, Utica. As orthopedic surgeon, from Fort Oglethorpe, Lieut. CHARLES M. GRIFFITH, New York City.

To Camp McClellan, Anniston, Ala., base hospital, from New York City, Lieut. WALTER L. WEEDEN, Clifton Springs.

To Camp Meade, Annapolis Junction, Md., base hospital, Capt. FREDERICK W. BANCROFT, New York City; from Fort Oglethorpe, Capt. JOHN J. COTTER, New York City; from New York City, Lieut. HERMAN GOODMAN, New York City. To examine the command for nervous and mental diseases, from Washington, D. C., Capt. GEORGE A. BLAKESLEE, New York City.

To Camp Upton, Long Island, N. Y., base hospital, Major HENRY B. DELATOUR, Brooklyn; from Camp Dix, Capt. WILLIAM J. MEYER, White Plains. Also *to Camp Devens*, Ayer Mass., and *Camp Sherman*, Chillicothe, Ohio, to give instruction and on completion *to Washington, D. C.*, for further instructions, Lieut. MARCUS A. ROTHSCHILD, New York City.

To Camp Wadsworth, Spartanburg, S. C., for duty, from Cambridge, Lieut. LEE A. HADLEY, Syracuse.

To Edgewood, Md., for duty, from Baltimore, Major FRANK G. YOUNG, New York City.

To Fort Benjamin Harrison, Ind., for duty, from Camp Forrest, Capt. CHARLES H. ERWAY, Elmira.

To Fort Bliss, Tex., as division psychiatrist, from Camp Shelby, Capt. ROBERT F. ZIMMERMAN, Elmhurst.

To Fort Oglethorpe, for inspection, and on completion *to Camp Jackson*, Columbia, S. C., for investigation, and on completion *to his proper station*, Capt. FRANKLIN C. McLEAN, New York City. For instruction, Capts. EMERSON W. AYARS, Alfred; HARRY L. PURDY, New York City; Lieuts. CHARLES G. SWAN, Avon; FRED ROVITTI, Bronx; LOUIS A. BONVINCINO, LEON J. GRANT, PHILIP HORWITZ, ABRAHAM NEMSER, JACOB J. PFEIFER, JOSEPH J. SORKIN, Brooklyn; MICHAEL J. McMAHON, FRANK N. POTTS, CHARLES SIMON, Buffalo; FLOYD H. JONES, Elmira; REX W. BEARD, MONROE B. KUNSTLER, WALTER W. OLIVER, ABE ORENSTEIN, HENRY M. SCHEER, SIDNEY L. SPIEGELBERG, EDWIN A. SPIES, New York City; ALLEN G. FECHTIG, Scrub Oak; ARTHUR W. BENSON, Troy. From Fort McHenry, Lieut. JULIUS E. ALTER, New York City.

To Governors Island, N. Y., for duty, Lieut. NATHAN D. GARNSEY, Kinderhook.

To Hoboken, N. J., for duty, Capt. MARK L. FLEMING, New York City; Lieut. HAROLD E. SHAVER, Sherman; from Fort Oglethorpe, Lieut. HARRY H. GOLDBERG, New York City.

To report by wire to the Commanding General, Eastern Department, for assignment to duty, Lieut. JOHN GIFFEN, Albany.

To Rockefeller Institute for instruction, Capt. CHARLES F. KIVLIN, Troy. On completion *to Bellevue Hospital*, New York City, for further instruction, and on completion *to Camp Wheeler*, Macon, Ga., base hospital, Capt. CHARLES F. KIVLIN. On completion at Bellevue Hospital, *to Camp Wadsworth*, Spartanburg, S. C., base hospital, Lieut. FREDERICK L. DETRICK, New York City. On completion at Bellevue Hospital, *to Hoboken, N. J.*, for temporary duty, from Fort Oglethorpe, Lieut. JOSEPH A. NOWICKI, Buffalo. On completion at Rockefeller Institute, *to Camp Upton*, Long Island, N. Y., base hospital, Lieut. MICHAEL J. LYNCH, New York City. For instruction in the serum therapy of pneumonia, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. BREWSTER C. DOUST, Syracuse.

To San Juan, Porto Rico, base hospital, Lieut. LEANDRO L. DE LA ROSA, New York City.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Lieut. JOSEPH HARKAVY, New York City.

To Washington, D. C., gas defense service, for duty, from Camp Meade, Capt. JEAN R. OLIVER, New York City.

To Williamsbridge, N. Y., for duty, from Hoboken, Capt. CARTER S. COLE, New York City. *U. S. General Army Hospital*, for duty, Lieut. RUEN VAN KLEECK, New York City.

Honorably discharged, Major JOHN ROGERS, New York City. On account of physical disability existing prior to entrance into the service, Lieut. ROBERT T. IRVINE, Ossining.

North Carolina

To Camp Crane, Allentown, Pa., for temporary duty, Lieut. CECIL GARRENTON, Bethel.

To Camp Gordon, Atlanta, Ga., for duty, Lieuts. ROBERT M. GALLANT, Charlotte; JOHN B. LEGWIN, Wilmington.

To Camp Greene, Charlotte, N. C., base hospital, from Camp Meade, Capt. JAMES M. COVINGTON, Wadesboro.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from New York City, Lieut. FRANK R. RUFF, Duke.

To Fort Benjamin Harrison, as member of a board to examine for tuberculosis, from Camp Forrest, Major CHARLES O'H. LAUGHINGHOUSE, Greenville.

To Fort Oglethorpe for instruction, Lieuts. GROVER C. BEARD, Kerr; GEORGE L. PRITCHARD, LaGrange.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. NATHAN H. ANDREWS, Rowland; JAMES A. SISKE, Troy.

North Dakota

To Camp Dodge, Des Moines, Iowa, for duty, from Camp Doniphan, Lieut. BENJAMIN FRANKSON, Rugby.

To Hoboken, N. J., for duty, from Hoboken, Capt. ORVILLE N. MELAND, Grand Forks.

Ohio

To Camp A. A. Humphreys, Accotink, Va., for duty, from Fort Oglethorpe, Lieut. WILLIAM R. DEEMER, Fremont.

To Camp Abraham Eustis, Lee Hall, Va., as camp surgeon from Fort Oglethorpe, Capt. JAMES M. DAY, Waynesfield.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieuts. LORA J. MARRIOTT, St. Louisville; WILLIAM C. PONTIUS, Warren.

To Camp Jackson, Columbia, S. C., base hospital, Lieuts. ADAM B. DENISON, BERNARD B. NEUBAUER, Cleveland.

To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Lieuts. EARL C. WOOD, Columbus; WILLIAM N. ROGERS, Hamilton.

To Camp Wheeler, Macon, Ga., base hospital, Lieut. CLARENCE G. BOZMAN, Hebron.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Zachary Taylor, Capt. JAMES B. DOUGHERTY, New Berlin. Base hospital, from Camp Zachary Taylor, Lieut. JOEL D. HOLSTON, Massillon.

To Fort McPherson, Ga., for duty, from Fort McPherson, Lieuts. WILLIAM L. LAYPORT, Cincinnati; WILLIAM S. NICHOLS, Cleveland.

To Fort Oglethorpe for instruction, Capt. GEORGE E. GARWOOD, Colton; Lieuts. CHARLES H. PELTON, Bucyrus; EUGENE P. NOITZ, Cleveland; ORAN P. ANDREWS, East Liverpool; EARL D. PEINERT, Grand Rapids; RAYMOND C. MAUGER, Johnstown; HENRY L. SOWASH, Ohio Soldiers and Sailors' Home; HERBERT M. KEIL, Portsmouth; KURT C. BECKER, CHARLES FABER, Toledo; MAX MAROWITZ, Youngstown; from Camp Sherman, Lieut. ALDO V. SIBERT, Lima.

To Fort Riley base hospital, and on completion *to Camp Pike,* Little Rock, Ark., base hospital, from Fort Riley, Lieut. OSCAR E. TOWNSEND, Cleveland. For instruction, Lieut. EVERETT C. ROBBINS, Cincinnati.

To Hoboken, N. J., for duty, Lieut. FRANK A. STOVE, Bowling Green.

To Washington, D. C., for duty in the Surgeon-General's Office, and on completion *to Fort McHenry,* for duty, from New York City, Capt. NATHANIEL M. JONES, Cleveland.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. THEODORE A. CHRISTEN, Cincinnati.

Oklahoma

To Camp Bowie, Fort Worth, Tex., as orthopedic surgeon, from Camp Doniphan, Lieut. JESSE B. HOLLIS, Hobart.

To Camp Custer, Battle Creek, Mich., base hospital, from St. Louis, Lieut. JOSEPH H. SANFORD, Muskogee.

To Camp Pike, Little Rock, Ark., for duty, Lieut. JOHN W. PENDLETON, Kingfisher; from Fort Oglethorpe, Lieut. GEORGE W. TILLY, Kusa.

To Fort Oglethorpe for instruction, from San Antonio, Capt. HENRY DeW. SHANKLE, Hastings; from Camp Devens, Lieut. ROBERT L. WESTOVER, Okmulgee.

To Fort Riley for instruction, Lieut. WOODARD R. MITCHELL, Verden.

Honorably discharged, Lieut. JOHN L. PLUMLEE, Poteau.

Resignation of Lieut. EDGAR A. JONES, Sayre, accepted.

Oregon

To Army Medical School for instruction, Lieut. EMILE C. JOSEPH, Corvallis.

To Camp Fremont, Palo Alto, Calif., as orthopedic surgeon, from Los Angeles, Lieut. VICTOR L. ROCHO, Woodburn.

To Camp Lewis, American Lake, Wash., as orthopedic surgeon, from Los Angeles, Lieut. CHESTER A. DOWNS, Portland.

To Camp Zachary Taylor, Louisville, Ky., for duty, from Camp Zachary Taylor, Capt. CHARLES C. OSBORN, Portland.

To Fort Riley, base hospital, Capt. JOHN G. ABELE, Portland.

To Hoboken, N. J., for temporary duty, from Rockefeller Institute, Capt. THOMAS N. JOYCE, Portland.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. LEON G. HOLLAND, Portland.

Letter directing Lieut. HENRY W. STEELHAMMER, Silverton, *to Hoboken, N. J.,* from Camp Greene, revoked.

Pennsylvania

To Arcadia, Fla., for duty, from Watervliet, N. Y., Capt. ROBERT H. BOLLING, Philadelphia.

To Camp Crane, Allentown, Pa., for temporary duty, Capt. DAVIS DALE, Bellefonte; Lieuts. GEORGE E. ALLEMAN, Altoona; BURNS S. CHAFFEE, Pittsburgh.

To Camp Custer, Battle Creek, Mich., as assistant to camp surgeon, from Camp Bowie, Major THOMAS W. JACKSON, Philadelphia. To examine the command for nervous and mental diseases, from Camp Doniphan, Capt. WILLIAM W. RICHARDSON, Mercer. As orthopedic surgeon, from Fort Oglethorpe, Lieut. FRANK P. McCARTHY, Erie.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. ABRAHAM J. KAISER, Saltsburg.

To Camp Dodge, Des Moines, Ia., base hospital, Lieut. THOMAS G. MILLER, Philadelphia.

To Camp Gordon, Atlanta, Ga., base hospital, from Camp Dix, Lieut. CHARLES C. GANS, Chambersburg. For duty, Lieut. DAVID BUDIN, Philadelphia; from Fort Oglethorpe, Lieut. EUGENE RUSH, Philadelphia.

To Camp Greene, Charlotte, N. C., for duty, from Camp Greene, Capt. ALEXANDER R. KIDD, Connellsville. Base hospital, from Army Medical School, Lieut. JAMES J. MONAHAN, Fountain Springs.

To Camp Lee, Petersburg, Va., base hospital, from Walter Reed General Hospital, Lieut. CLIFFORD C. HARTMAN, Pittsburgh.

To Camp Logan, Houston, Tex., base hospital, from Camp Logan, Lieut. THEODORE MELNICK, Philadelphia; from Oglethorpe, Lieut. EDWARD PARDOE, South Fork.

To Camp Meade, Annapolis Junction, Md., as member of tuberculosis examining board, from Fort Oglethorpe, Lieut. RALPH L. ENGLE, Philadelphia. Base hospital, Lieut. OLIVER H. P. PEPPER, Philadelphia; from Fort Oglethorpe, Lieut. SETH A. BRUMM, Philadelphia.

To Camp Pike, Little Rock, Ark., as member of the tuberculosis examining board, from Camp Greene, Lieut. HENRY G. GODFREY, Philadelphia.

To Camp Upton, Long Island, N. Y., base hospital, from Fort Oglethorpe, Capt. WILLIAM L. BATES, Jr., Philadelphia.

To Fort Monroe, Va., for duty, Capt. WILLIAM C. MEANOR, Beaver.

To Fort Oglethorpe for conference, and on completion *to his proper station,* Major GEORGE C. JOHNSTON, Pittsburgh. Base hospital, and on completion *to Camp McClellan,* Anniston, Ala., base hospital, from Fort Oglethorpe, Lieut. DON. C. FOSSELMAN, Whitsett. For instruction, Lieuts. JOHN M. JACKSON, Beaver Falls; GEORGE F. BOAL, Freedom; ALBERT A. REDELIN, Freeland; RAYMOND A. WOLFF, New Kensington; RALPH H. ARMSTRONG, Peckville; JOHN D. J. CURRAN, Philadelphia; MORRIS A. COHEN, Pittsburgh; WALDO E. PRESTON, Ramsaytown; WALTER S. LUCAS, Wynnewood; from Camp Jackson, Lieut. THOMAS L. COLEY, Bethayres.

To Hoboken, N. J., for duty, Lieuts. SAMUEL C. DOWDS, Dunbar; HARRY J. OWENS, Hazelton; GEORGE MANTINGH, Pittsburgh; CHARLES N. BROSIUS, Shamokin Damp; from Newport News, Lieut. MAURICE GOLDBERG, Philadelphia.

To Lakehurst, N. J., for duty, from Fort Oglethorpe, Lieut. JAMES A. McCRACKEN, Norristown.

To Newport News, Va., for duty, from Fort Oglethorpe, Capt. CHAS. J. SMYSER, New Wilmington.

To Philadelphia, Pa., for orthopedic instruction, Lieut. ALBERT T. RANSONE, Philadelphia.

To Rochester, N. Y., for duty, from Fort Oglethorpe, Capt. FRANK L. McCREADY, Sewickley.

To Rockefeller Institute for instruction in laboratory work, Capt. WILLIAM H. BAILEY, Philadelphia. For instruction, and on completion *to Bellevue Hospital,* New York City, for further instruction, and on completion *to Camp Upton,* Long Island, N. Y., base hospital, from Fort Oglethorpe, Capt. RUDOLPH A. CONSTIEN, Ashland. On completion of instruction at Bellevue Hospital, *to Camp Beauregard,* Alexandria, La., base hospital, from Fort Oglethorpe, Lieut. WILLIAM O. DOUGHERTY, New Bethlehem.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, from Army Medical School, Lieut. JOHN N. HAYES, Crafton.

To Washington, D. C., for duty in the Surgeon-General's Office, from Camp Jackson, Lieut. CARL C. YOUNT, Philadelphia.

Honorably discharged on account of physical disability existing prior to entrance into the service, Capt. EVAN O'N. KANE, Kane.

Resignation of Lieut. ROBERT C. JOHNSTON, Springdale, accepted.

The following orders have been revoked: *To Washington, D. C.,* from Philadelphia, Major ISAAC H. JONES, Philadelphia. *To Camp Jackson,* from Fort Oglethorpe, Lieut. PATRICK F. McHUGH, Wilkes-Barre. *To Fort Riley,* for instruction, Lieut. JOHN M. HIGGINS, Sayre.

Rhode Island

To Camp A. A. Humphreys, Accotink, Va., for duty, from Fort Oglethorpe, Lieut. JOSEPH L. BELLIOTTI, Providence.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, Capt. JOSEPH F. HAWKINS, Providence.

To Fort Oglethorpe for instruction, Capt. REMINGTON P. CAPWELL, Lieut. ERNEST A. BURROWS, Providence.

To Newport News, Va., for temporary duty, Lieut. PHILIP C. MEANS, Apponaug.

South Carolina

To Camp Gordon, Atlanta, Ga., for duty, Lieut. JAMES F. DOBSON, Ridgeway.

To Fort Oglethorpe for instruction, Lieut. FRANCIS G. CAIN, Charleston.

South Dakota

To Fort Riley for instruction, Capt. JOHN W. BRACKETT, Sturgis.

Tennessee

To Army Medical School for instruction, Capt. WILLIAM N. LACKEY, Gallatin.

To Camp Crane, Allentown, Pa., for temporary duty, Capt. CHARLES K. SUMMERS, Memphis.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. CLEVELAND PAYNE, Oakland.

To Camp Gordon, Atlanta, Ga., as member of the tuberculosis examining board, from Camp Greene, Lieut. OWEN S. DEATHRIDGE, Nashville. For duty, Lieut. WALTER W. SALE, Covington.

To Camp Lee, Petersburg, Va., base hospital, Lieut. JAMES P. CRAWFORD, Nashville.

To Camp Pike, Little Rock, Ark., for duty, Lieut. CARL R. CRUTCHFIELD, Nashville.

To Camp Zachary Taylor, Louisville, Ky., base hospital, from New York City, Capt. ORVILLE B. CHANDLER, Union City.

To Fort Oglethorpe for duty, from Camp Dix, Capt. OTSY J. PORTER, Columbia.

To Hoboken, N. J., for duty, Capt. GEORGE E. VAUGHAN, Clarksville.

To Lakehurst, N. J., for duty, from Fort Oglethorpe, Lieut. FREDERICK W. LEE, Springfield.

To Rockefeller Institute for instruction, and on completion *to Camp Meade,* Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Capt. CHARLES P. EDWARDS, Kingsport.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieut. DORSEY T. GOULD, Lawrenceburg.

Texas

To Army Medical School for instruction, Lieut. BASCOMB McI. PUCKETT, Amarillo.

To Camp Bowie, Fort Worth, Tex., base hospital, Lieut. HESTER B. SMITH, Dallas.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. EDWARD B. JONES, Jacksonville.

To Camp Hancock, Augusta, Ga., base hospital, from Army Medical School, Lieut. JOHN C. THOMAS, Taylor.

To Camp Laurel, Md., for duty, from Fort Oglethorpe, Lieut. TILGHMAN O. DARBY, Sour Lake.

To Camp Travis, Fort Sam Houston, Tex., as sanitary inspector, from Camp Travis, Capt. THEODORE H. HARRELL, Gonzales. For duty, Lieuts. WILLIAM D. SPILLER, Galveston; THOMAS T. JACKSON, San Antonio; from Corpus Christi, Capt. THOMAS P. POOLE, Eagle; from duty as a contract surgeon at Camp Travis, Capt. HANSON S. GIFFORD, San Antonio.

To Corpus Christi, Tex., for duty, Capt. CHARLES E. CANTRELL, Greenville.

To Fort Oglethorpe base hospital, and on completion *to Camp Wadsworth,* Spartanburg, S. C., base hospital, from Fort Oglethorpe, Lieut. WILLIAM M. DICKENS, Greenville. For instruction, from Camp MacArthur, Lieut. HAROLD E. NICHOLSON, Mobeetie.

To Fort Riley for instruction, Lieut. KINCY J. SCOTT, Temple.

To Philadelphia, Pa., for orthopedic instruction, from Garden City, Lieut. FRANCIS W. CARRUTHERS, Hillsboro.

To Rockefeller Institute for instruction, and on completion *to Bellevue Hospital*, New York City, for further instruction, and on completion *to Camp Jackson*, Columbia, S. C., base hospital, from Fort Oglethorpe, Lieut. JESSE C. MAY, Fort Worth.

Retained in service and ordered to Camp Greene, Charlotte, N. C., base hospital, from Hoboken, Capt. VINNY L. SMITH, Jewett.

Honorably discharged, Lieut. GEORGE B. TABOR, Dallas. On account of physical disability existing prior to entrance into the service, Capt. STANLEY T. LOWRY, San Antonio; Lieut. ROBERT A. GORDON, Lorenn.

Vermont

To Camp Pike, Little Rock, Ark., for duty, from Fort Oglethorpe, Capt. EDWARD F. MURRAY, Burlington.

To Fort Oglethorpe for instruction, Lieut. JOHN P. KERRIGAN, Ludlow.

To Lakehurst, N. J., for duty, from Fort Oglethorpe, Lieut. LEONARD B. ROWE, Orwell.

Virginia

To Army Medical School for duty, from Camp Laurel, Lieut. JAMES W. CLARKSON, Mount Solon.

To Camp Devens, Ayer, Mass., for duty, Major CHARLES A. BROWN, Dillwyn; from Fort Oglethorpe, Lieut. LOUIS C. S. HAYNES, Taylor's Stone.

To Camp Dodge, Des Moines, Iowa, base hospital, from Camp Wadsworth, Capt. KENNETH D. GRAVES, Richmond.

To Camp Gordon, Atlanta, Ga., for duty, Lieut. JAMES A. MERIWETHER, Holcombs Rock.

To Camp Hancock, Augusta, Ga., base hospital, from Camp Lee, Major BEVERLY R. KENYON, Norfolk. For duty, from New York City, Capt. RICHARD P. BELL, Staunton.

To Camp Laurel, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. WILLIAMSON C. WELBURN, Ballston.

To Charleston, S. C., for duty, from Fort Caswell, Major WALTER A. NEWMAN, Manassas.

To Fort Oglethorpe for instruction, Lieuts. JOHN B. VAIDEN, New Kent; LEWIS B. STATON, Norfolk.

To Fort Sam Houston, Tex., for duty, from Newport News, Major PAUL J. PARKER, Hampton.

To Hoboken, N. J., for duty, Lieut. ANDREW D. PARSON, Stony Creek; from Fort Oglethorpe, Lieut. HARRY R. SMITH, Appalachia.

To Mineola, Long Island, N. Y., for duty, from Memphis, Major HERBERT C. MALLORY, Greenbackville.

Honorably discharged on account of physical disability existing prior to entrance into the service, Lieuts. GRANVILLE EASTHAM, Rapidan; SAMUEL S. COTTRELL, Richmond.

Washington

To Camp Dodge, Des Moines, Ia., as assistant to camp surgeon, from Fort Riley, Capt. HIRAM M. READ, Seattle.

To Camp Fremont, Palo Alto, Calif., for temporary duty, from Los Angeles, Capt. EVERETT O. JONES, Seattle.

To Camp Gordon, Atlanta, Ga., for inspection, thence on completion of leave *to Camp Doniphan*, Fort Sill, Okla., for inspection, and on completion *to Camp Bowie*, Fort Worth, Tex., *Camp Cody*, Deming, N. M., and *Fort Bliss, Tex.*, for inspection, and on completion *to Camp Travis*, Fort Sam Houston, Tex., for temporary duty, from Camp Pike, Capt. EDWARD A. RICH, Tacoma.

To Camp Lewis, American Lake, Wash., base hospital, Capt. EDWARD P. FICK, Seattle.

To Fort Riley for instruction, Capt. AUGUST E. GERHARDT, Wenatchee.

To report by wire to the Surgeon-General's Office, Western Dept., for assignment to duty, Lieut. ADOLPH J. OSTERMAN, Mt. Vernon.

West Virginia

To Army Medical School for instruction, Lieut. JAMES M. SHULER, Welch.

To Camp A. A. Humphreys, Accotink, Va., for duty, from Fort Oglethorpe, Lieut. FINLY K. VASS, Gassaway.

To Camp Devens, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. JOHN O'BRIEN, Jr., Blandville.

To Camp Lee, Petersburg, Va., base hospital, Capt. EUGENE A. HILDRETH, 3d, Wheeling.

To Camp Meade, Annapolis Junction, Md., base hospital, from Fort Oglethorpe, Lieut. JOHN S. CAYCE, Ben Bush.

To Fort Oglethorpe for instruction, Capt. WILLIAM A. CRACRAFT, Wheeling; Lieuts. CHARLES W. MYERS, Coketon; CHARLES P. BURKE, Follansbee.

To Fort Sam Houston, Tex., for temporary duty, from Fort Oglethorpe, Lieut. DAVID McA. AIKMAN, War.

To Hoboken, N. J., from Fort Oglethorpe, Lieuts. HARRY D. LAW, Conings; JAMES E. HATFIELD, Williamson.

The following orders have been revoked: *To Camp Cody*, from Fort Oglethorpe, Lieut. AUBREY F. LAWSON, Weston. *To Camp Jackson*, from Fort Oglethorpe, Capt. FRED W. BARGER, Hiawatha.

Wisconsin

To Camp Dodge, Des Moines, Ia., for duty, from Camp Doniphan, Lieut. CLARKE B. DEVINE, Marshall.

To Camp MacArthur, Waco, Tex., base hospital, from St. Louis, Lieut. OLE A. NELSON, Park Falls.

To Camp Pike, Little Rock, Ark., for duty, Lieut. RICHARD A. DREYER, Wheeler.

To Edgewood, Md., base hospital, from Camp Pike, Lieut. WILMOT P. MILLER, Milwaukee.

To Fort Benjamin Harrison, Ind., for duty, from Camp Forrest, Capt. HARRY C. MIX, Green Bay.

To Fort McDowell, Calif., for duty, from Fort Riley, Lieut. HAROLD McM. HELM, Beloit.

To Fort Riley, base hospital, and on completion to Fort Riley, for temporary duty, from Fort Riley, Lieut. G. FRANK ANDREW, La Crosse. For instruction, Lieuts. EDMOND L. McQUIN, Fairwater; ADOLPH L. KYLLO, Grantsburg; DEAN S. VAN HECKE, Merrill; SAMUEL R. MITCHELL, Milwaukee; ERNEST L. SCHROEDER, Shawano; LAWRENCE H. OLIVER, Siren; GEORGE E. LINDOW, Watertown.

To Washington, D. C., for duty, from Fort Oglethorpe, Lieut. DEXTER H. WITTE, Hartford.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Miscellaneous.—At the meeting of the board of trustees of Howard College, March 13, the proposition of the United States government to establish a reconstruction hospital at Birmingham, using the grounds and buildings of the college for the purpose, was endorsed.——A health survey in Madison County was begun at Huntsville, March 14, under the direction of Dr. Carl A. Grote, county health officer.——Sanitation in the vicinity of Muscle Shoals, where government ammunition plants are to be erected, was begun March 15. Dr. Harry S. Mustard of the Public Health Service has been placed in charge of the work.

Officers Elected.—At the meeting of the Medical Association of the State of Alabama, held in Birmingham from April 16 to 19, the following officers were elected: president, I. L. Watkins, Montgomery; vice president, H. S. Ward, Birmingham (northern division); secretary, H. G. Perry, Montgomery; treasurer, J. U. Ray, Woodstock; censors for five years, Glenn Andrews, Montgomery, and S. G. Gay, Selma; censor for four years, C. A. Thigpen, Montgomery, to fill unexpired term of Dr. W. H. Sanders (deceased); censor for one year, R. S. Hill, Montgomery, to fill unexpired term of Dr. I. L. Watkins (resigned). During the meeting a service flag was unveiled, bearing 432 stars, which represent the number of members of the profession now serving as officers in the Army, Navy and United States Public Health Service.

ARKANSAS

Officers Elected.—At the meeting of the Jackson Medical Association at Newport, the following officers were elected: president, Dr. Oscar E. Jones; vice-president, Dr. Ira H. Erwin; and secretary-treasurer, Dr. Elbert L. Watson.

Miscellaneous.—Preliminary work for the control of malaria in the vicinity of Bigelow was begun, March 16, when Dr. Charles W. Garrison, Little Rock, state health officer, and Dr. Homer A. Taylor, went to that place to plan the campaign.——Dr. J. C. Geiger, epidemiologist of the United States Public Health Service, who has been conducting a sanitary campaign in North Little Rock, has transferred his work to Lonoke, where an aviation camp is being built.——A health survey has been completed at Pine Bluff, and committees have been appointed to carry out the recommendations of the report.

CALIFORNIA

Miscellaneous.—From the *Bulletin* of the state board of health it is learned that Dr. Robert A. Peers, Colfax, has been assigned to the American Branch of the Red Cross in France in the interest of the control of tuberculosis in that country.——Venereal diseases are being reported more satisfactorily. In 1917, 2,873 cases of gonococcus infection were reported, as against 1,091 cases in 1916; cases of syphilis were reported to the number of 1,790 in 1917 as against 1,538 in 1916. Forty-five out of the fifty-eight counties in the state reported these diseases, only the mountain counties with low populations failing to report.——Ferndale, in Humboldt County, has established physical examinations in the schools.——The state board of health has condemned the use of sewage for irrigating vegetable gardens and will prohibit the sale of vegetables grown under such conditions, though such fertilizer may be used on grains and grasses, fodder crops, etc., harvested in the dry state.

ILLINOIS

Chicago

Public Health Meetings.—The Chicago Public Health Association, which was organized in July, 1917, and holds meetings in the various school centers throughout the city, was compelled to suspend its activities during the cold weather on account of scarcity of coal. The bulletin of the health department now announces that the meetings will be

resumed, since no heat will be required, and the first spring meeting is announced for April 25 in a number of the school buildings on the same evening. For the first meetings two papers will be read, one on prevention of blindness and the other on the ten commandments of health. Both will be short and general discussions will follow. These meetings have heretofore proved of great interest.

INDIANA

Disloyalty Charged.—Dr. Frederick W. Krueger, Richmond, it is reported, has been dismissed from the Wayne County conscription board for disloyal remarks. Dr. Krueger has issued a statement denying the charges and asserting his loyalty to the United States.

Tuberculous Conscriptionists.—Arrangements are being completed by the Indiana Society for the Prevention of Tuberculosis whereby it is hoped that every registrant under the draft law and every man in the service who is rejected on account of tuberculosis, may have an opportunity to regain his health under the care of tuberculosis experts. Names and addresses of all tuberculous soldiers will be sent to the National Society for the Prevention of Tuberculosis and that society will send each state society its list of names. All the work is to be of a confidential nature, in order that a maximum amount of good may be done with the least annoyance to the afflicted men or to members of their families.

KANSAS

State Board Reappointments.—Dr. Harry L. Aldrich, Caney; Oliver D. Walker, Salina, and Charles H. Lerrigo, Topeka, have been reappointed members of the state board of health for a term of three years. Dr. Albert S. Ross, Sabetha, has been reappointed a member of the state board of medical examination and registration for a term of four years.

Personal.—Dr. Herbert L. Clark has resigned as health officer and city physician of Topeka.——Dr. Elmer E. Morrison and Edwin C. Button, Great Bend, sustained painful injuries in an automobile accident near Chase, March 22.——Dr. Middleton L. Perry, for fifteen years superintendent of the state hospital for epileptics at Parsons, has been appointed superintendent of the Topeka State Hospital to succeed the late Dr. Thomas C. Biddle.——Dr. Thomas B. H. Anderson, assistant surgeon, U. S. P. H. S., formerly stationed at Ellis Island in the immigration service, has arrived in Leavenworth to take charge of sanitary work in the cantonment zone.

LOUISIANA

American Hay-Fever Prevention Association.—At a meeting of the American Hay-Fever Prevention Association in New Orleans, April 14, Dr. William Scheppegrell made a report showing that with the cooperation of the city board of health and the mayor in cutting weeds, etc., the hay-fever situation had been improved and there had been favorable comment on the general reduction of weeds. Especially important had been the appointment of a weed cutting day by the mayor in August, 1917. The hay-fever clinic at the charity hospital had demonstrated the practicability of immunization against hay-fever. A department for colored patients has been added to the clinic. All state boards of health in the United States except six are now represented in the association.

MAINE

Epidemic at State Girls' School.—On account of an epidemic of measles and mumps at the state school for girls at Hallowell, the trustees of state juvenile institutions issued an embargo on the sending of more children to these institutions until further notice.

MARYLAND

Measles Almost Epidemic.—Measles is almost epidemic in Baltimore, according to the records of the health department. Five hundred and eight cases have been reported since noon last Friday, the highest weekly record in a year. There has, however, been but one death from the disease so far during the week.

Meeting Postponed.—The meeting of the Medical Library Association in Baltimore has been postponed on account of conditions brought about by the war. The executive committee believes that the energy and money usually put into the meeting could be used to greater advantage in furthering the cause for which the Allies are fighting.

South Baltimore Hospital.—The South Baltimore General Hospital was formally opened to the public during the past week, and a number of patients were admitted. The building will accommodate fifty patients, and there are special medical and surgical wards. Dr. Emil Novak is surgeon-in-chief and Dr. John G. Onnen, his assistant.

Personal.—Dr. Thomas L. Richardson will enter the United States Public Health Service when the government formally takes over Quarantine Station within the next few days. Quarantine is to be taken over by the government under the terms of a lease authorized by the Baltimore city officials, and as soon as a congressional appropriation becomes available, the city will be paid $76,000 for the buildings, grounds and equipment. City patients suffering from quarantinable diseases are to be treated by the government at $1 a day per patient.

Conference on Tuberculosis.—Important subjects were under discussion at the State War Time Tuberculosis Conference held at McCoy Hall, Baltimore, April 18. The conference was divided into two sessions. In the afternoon, the annual meeting of the Maryland Association for the Prevention and Relief of Tuberculosis was held and the following officers elected: Dr. Henry Barton Jacobs, Baltimore, president; Dr. C. Hampson Jones, secretary, and Dr. Joseph S. Ames, treasurer. Dr. Martin F. Sloan, Townson, superintendent of the Eudowood Sanatorium, then spoke on the work of the state hospital and the important cooperative work of the tuberculosis nurses, whose educational propaganda and after-care are adjuncts to sanatorium treatment. At the evening session, Major Joseph A. Chatard, medical officer at the U. S. Army General Hospital No. 2, Fort McHenry, made the principal address on the rehabilitation work at the fort, particularly as it relates to the treatment of tuberculosis patients. Dr. John D. Blake, health commissioner of Baltimore city, and Dr. Allen K. Krause, Saranac Lake, director of the Kenneth Dow Foundation for the Study of Tuberculosis at the Johns Hopkins Hospital also spoke on tuberculosis, its prevention and treatment.

MASSACHUSETTS

Commissioner of Health.—The recalling of Dr. Allan J. McLaughlin to the United States Public Health Service to become Assistant Surgeon-General in charge of the Division of Interstate Quarantine, left a vacancy in the health commissionership, filled by Dr. McLaughlin since November, 1914. The vacancy has been filled by the appointment of Dr. Eugene R. Kelley, who went into office April 1. Dr. Kelley was formerly commissioner of health of Washington, and for three years past has been director of the department of communicable diseases in the Massachusetts organization.

MINNESOTA

Personal.—Dr. Arthur F. Kilbourne, superintendent of the Rochester State Hospital, was stricken with cerebral hemorrhage, March 25.——Dr. D. Edmund Smith, Minneapolis, has left for France to do work among the refugees.——Dr. Homer M. McIntire, Eveleth, connected with the More Hospital, has become interested in a hospital at Ely, Nev.

Five-Day Clinic in Minneapolis.—Under the auspices of the clinical section of the Hennepin County Medical Society, clinics were held in Minneapolis, from April 8 to 12. Clinical facilities were afforded by the fourteen hospitals of the city. A banquet was held at the Radisson, April 8, by the society, and on April 10, the Minnesota Academy of Ophthalmology and Oto-Laryngology entertained the visitors at dinner.

MISSOURI

Personal.—Major Louis P. H. Bahrenburg, surgeon of the United States Public Health Service, Marine Hospital, St. Louis, has been elected medical director of the St. Louis Society for the Control and Prevention of Tuberculosis.——Dr. Dora Greene-Wilson of Kansas City was a guest of honor of the medical women of Chicago at the monthly dinner of the Woman's Medical Club of Chicago, March 31.——Dr. Haynie Rowell of Kearney, a member of Clay County Medical Society, who has served as a member of the school board of the county for the past twenty-one years, has announced that he will not be a candidate for reelection.

Bonds Issued for Hospital.—Audrain County has voted authority to issue bonds to the amount of $75,000 for the

erection of a general hospital to be located in Mexico. This is the first county in the state to take advantage of the law passed at the last session of the legislature authorizing any county to establish and maintain a public hospital by levying a tax and issuing bonds therefor. The members of the Audrain County Medical Society were very active in helping to carry the election. A training school for nurses will be established in connection with the new hospital. Mexico Hospital, which has been operating for the past four years, will turn over its equipment, estimated to be worth about $6,000, to the county for use in the new hospital. The success of the Mexico Hospital, which was supported by private subscriptions, was so conspicuous that it served as a stimulus for the passage of the law to issue bonds, the vote being about nine to one in favor of the proposition.

NEW YORK

Course in Neurology and Psychiatry at Neurologic Institute.—Under the direction of Dr. Walter Timme, a course in neurology and psychiatry for medical officers of the Army is being conducted at the Neurologic Institute. The instructors include the entire staff of the institute, and in addition, special courses of instruction at the Mount Sinai Hospital, the Montefiore Home, the Psychiatric Institute at Ward's Island and the insanity wards at Blackwell's Island, are to be given.

New York City

Personal.—Dr. S. S. Goldwater, former health commissioner, has resigned as chairman of the mayor's committee on hospital and medical facilities. He still remains a member of the committee and has suggested plans for its reorganization. Commissioner Coler will assume the duties of chairman.

Training for Nurses Aids.—In view of the increased demand for nurses during the war, the mayor's committee on hospital and medical facilities, in their report of 1917, recommended that the plan for the training of volunteer nurses' aids, now followed in base hospitals under the auspices of the Red Cross nursing service, be accepted and extended to such other hospitals as may be approved by the Red Cross, and that the courses of instruction should conform to this plan and be carried on under its auspices. While the enrolment and training of nurses in the hospitals under the regular plan should be promoted to the greatest possible extent, still it will be found that the numbers will be totally inadequate to take care of the possible 150,000 additional patients it will be necessary to provide for on account of the war, and the training of nurses' aids from among women physically and mentally capable who are desirous of doing patriotic service is the solution of the problem. They will serve under the direction of regularly trained nurses. A course of instruction for these nurses' aids has been prepared by the Red Cross, and the following hospitals have so far undertaken the training of such aids: Bellevue, Brooklyn, German, Mount Sinai, Post Graduate, Presbyterian, Roosevelt, St. Luke's and the Staten Island. Already 411 aids have completed their theoretical and practical training.

OHIO

State News.—The Ohio *Public Health Journal*, the organ of the state department of health, for March is devoted almost entirely to child hygiene and is called the child hygiene number. Its purpose is to promote the saving of the quota of babies assigned to Ohio by the federal Children's Bureau in its baby saving campaign for 1918. Among the articles are state and local programs for child welfare and child saving, and news and statistics of what is being done and what has been done along these lines in the state. There is also an editorial plea for efforts to help attain the low infant mortality rate of New Zealand, which was, in 1912, 5.1 per thousand for children under 1 year of age.——In February twenty cases of smallpox were discovered in a Cleveland parochial school. None of the patients had had medical attention. Four hundred of the pupils were then vaccinated. Nearly 50,000 school children in the city have been vaccinated since last fall, and 104,000 are said to be now protected against smallpox.——At Wellston, where an epidemic of smallpox has been in progress, the board of health has instructed the city solicitor to prosecute the first smallpox victim who, by violation of the quarantine regulations, infected numerous other persons, thus starting the epidemic.

OKLAHOMA

State Hospital Burns.—April 13, the state hospital for insane, Norman, was burned, with a loss of many lives. Three buildings, all frame, were destroyed and the fourth suffered severe damage. Twenty-three bodies have been recovered so far, and four patients are missing. The deaths were all in Ward 14, and the victims were negroes. The patients in the other buildings were removed in safety. The property damage is estimated at $40,000. The legislature of 1916 passed an appropriation of $85,000 to construct a modern fireproof building, but the fund has only recently become available.

OREGON

Personal.—Dr. Esther C. Pohl Lovejoy of Portland has returned from France, where she has been the last four months as a special representative of the Red Cross in the department of civil affairs, which is entrusted with the work of giving relief to the civilian population of France and Belgium. She will be attached to the civilian relief service of this country.——Dr. J. E. Anderson, Salem, has filed his declaration as a candidate for nomination for governor.——Dr. Henry J. Kavanaugh has been appointed city physician at Pendleton to succeed Dr. Hillis H. Hattery, who has resigned to enter the Medical Service of the Army.

PENNSYLVANIA

Personal.—Dr. Jane R. Baker of West Chester has been appointed by the government as trustee of the Asylum for the Chronic Insane at Wernersville.

Philadelphia

Personal.—Dr. George Woodward, trustee and chairman of the bureau of municipal research since its organization nine years ago, resigned recently.

Health Day.—Health day will be celebrated in the schools and throughout Philadelphia, May 1. A mass meeting will be held at the academy of music when former President William H. Taft will deliver an address on "Health and Its Value in the Present Crisis." Dr. Alice W. Tallant, who has returned after several years service in France, will also be one of the speakers.

Naval Hospital to be Enlarged.—The United States Naval Hospital at Gray's Ferry Road and the hospital at the Navy Yard will both be enlarged. Additional buildings will be erected at the Gray's Ferry institution and two wards will be added to the building at the Navy Yard to accommodate 800 more beds. At present, the capacity at the former institution is 500 but the addition will total a capacity of 1,400, and $355,000 has been appropriated for the work there, and $800,000 has been appropriated for the work at the Navy Yard.

VERMONT

School Medical Inspection.—Burlington and Rutland are the only two cities in the state, it is said, who have school medical inspection. The proposition to establish such inspection in the schools in various towns of the state has always been voted down. In Burlington, during 1917, the cost of this inspection in twenty-two schools was $1,358.26.

Personal.—Dr. David Marvin of Essex Junction has been named as treasurer of the Vermont State Medical Society to fill the vacancy caused by the death of Dr. Edward H. Martin of Middlebury.——Dr. Fred A. Edmunds, Bethel, is convalescent from an operation for chronic appendicitis.——Dr. Henry J. Potter, Bennington, was fined $150 for violation of the Harrison Narcotic Law, after pleading guilty.

Health Officers' School.—A school of instruction for health officers of the state will be held at Burlington beginning May 21 and continuing through the morning of May 23. Attendance is compulsory unless the officers are excused by the state board of health. Each health officer will be allowed $4 per day and actual expenses while in attendance. Programs and announcements are to be distributed later.

Analysis of Butter Substitutes.—The increased use of butter substitutes on the request of the federal food administration led the state authorities to examine various products in the laboratory. Oleomargarin was selected and twenty-four different brands found in Burlington and three others obtained at St. Albans were examined in December and January. Six of the twenty-seven brands were the so-called nut margarins, made entirely or largely of vegetable fats. One brand tasted old and rancid; the others had the usual tastes of the dif-

ferent oleomargarins. The *Bulletin* of the Vermont State Board of Health, from which the information is obtained, says that there is no standard for oleomargarin, but the requirements for butter are that it contain not less than 82.5 per cent. of butter fat and not more than 16 per cent. of moisture. The average weight of the 27 "pound" samples was 16.1 ounce; the highest weight was 17 and the lowest, 15.5 ounces. The average moisture content was 10.1; the highest was 19.8, the lowest, 5.9. The average fat content was 82.2; the highest was 90.4, the lowest, 77.7. The average cost of the samples was 33 cents; highest, 38; lowest, 25 cents.

GENERAL

Cod Liver Oil.—According to *Commerce Reports*, 58,140 gallons of cod liver oil valued at $176,022 was invoiced at Bergen, Norway, for the United States during 1917.

Venereal Clinics.—The American Red Cross, according to the *Social Hygiene Bulletin*, has recently made allotments for the establishment of venereal clinics at Newport News, Va.; Charlotte, N. C.; San Antonio and El Paso, Texas; Louisville, Ky., and Chillicothe, Ohio, under the direction of the sanitary officers of the United States Public Health Service. A social worker will be assigned to each from the United States Army.

Site for Leprosarium.—Surgeon-General Rupert Blue of the Public Health Service has appointed a committee to select a site for the proposed leprosarium for which Congress in 1917 appropriated the sum of $250,000. The committee consists of Surg. George W. McCoy, director of the Hygienic Laboratory, Dr. William C. Woodward, health officer of the District of Columbia, and Dr. Charles V. Chapin, health commissioner of Providence, R. I.

Coal Mine Fatalities in 1917.—In a preliminary statement of coal mine fatalities in the United States in 1917, compiled by Albert H. Fay of the bureau of mines, it is said that the abnormal conditions under which the coal mines were operated in 1917 are reflected in the accident records by an increase of 21 per cent. in fatalities as compared with 1916. There was an unusual demand for coal but the production increase was less than 10 per cent. It is said that it is impossible to give the number of men employed in the industry, but the number was increased in some states while in others there was a decrease. It is believed, however, that the number is practically the same as was employed in 1916, namely, 720,971. The demand for coal increased the number of working days for the men for the year in mines favorably situated and supplied with cars, and this increased the hazard of injury and fatality to the individual miner, as his risk is proportional to the time he is exposed. In other mines not so favored by the car supply, work was interrupted, and this again increased the hazard from certain dangers such as gas, dust, falls of roof, etc., as an active mine will ordinarily be kept in better condition than one operated only part of the time. The fatalities grouped by principal causes show an increase for falls of roof of 185, or 19.23 per cent., and for mine cars and locomotives underground an increase of 23.59 per cent. Haulage on the surface shows an increase of 52 per cent. Fatalities produced by explosives and electricity show a decrease of 24 per cent., there being 111 deaths for 1917 as against 146 for 1916. The record for 1917 shows that any relaxation in inspection, safety measures, and supervision, or any temporary disorganization of the industry, or any increased demand for coal immediately results in higher accident records.

FOREIGN

Thompson Memorial Lecture.—April 9, Sir Ernest Rutherford delivered the first "Silvanus Thompson Memorial Lecture," in memory of the first president of the Roentgen Society, London.

Antwerp Physicians Penalized by the Germans.—The *Presse Médicale* relates that at the recent court martial Dr. Demets was condemned to be shot and Drs. François, Bremken and van den Wildemberg were sentenced to hard labor for life.

Closer Connection Between Universities.—A conference has been called at London, May 9, of representatives of the various universities to discuss the possibility of closer connection between British universities and those of the allied countries.

The Delanglade Souvenir Medal.—A subscription has been opened to erect a bust of Prof. E. Delanglade at the scene of his labors in the city hospital at Marseilles and distribute souvenir medals to the subscribers. His death at the front was recently mentioned.

Spanish Medical Students to Study Emergency Surgery at the Front.—The government of Spain has appropriated 30,000 pesetas to pay the expenses of a party of medical students to visit an advanced hospital of the French army. One student is to be selected among the most advanced of each of the seven medical colleges of the country, and some eminent surgeon will head the party. To study the progress realized in emergency surgery is the main object of the expedition.

Prizes Awarded by the Spanish Academy.—Seven prizes were distributed at the recent annual meeting of the Academia Nacional de Medicina at Madrid, the cash prizes totaling over 41,000 pesetas, about $8,200. The themes included vaccine therapy, medical geography and epidemics. One prize goes annually to the professor in the university who has contributed most to the progress of science, and one to a city physician, married and with children, who has sent in the best report on some epidemic.

Deaths in the Profession Abroad.—L. Revilliod, professor of clinical medicine at the University of Geneva. In collaboration with Binet, he published tables showing the damage wrought by alcohol in different organs.——**B. H. Stephan,** director for twenty-five years of the public hospital at Amsterdam and since then medical inspector for the northern provinces of the Netherlands.——**R. S. Trevor,** lecturer on pathology and dean of St. George's Medical School at London, aged 46.——**G. A. Petrone,** lecturer in pathology and pediatrics at the University of Naples, aged 44.——**C. Sauvage,** professor agrégé of obstetrics at the University of Paris, aged 44.

Rehabilitation of the Maimed.—The federation of those specially interested in the training of wounded soldiers is organizing provisions for the purpose in every province in Italy. Where nothing of the kind has yet been organized, committees of seven members are being appointed to consider ways and means. The committee consists of the medical officer of the province, a representative of the provincial government, two soldiers crippled in the war, one factory inspector, one representative of the hospitals in the region, and one lawyer to be appointed by the bar association. This committee is to appoint subcommittees, so that this welfare work for the war cripples will be extended to the remotest towns.

Organization of the Profession in Spain.—The minister of war has asked the members of the medical military department of the Spanish army and navy to cooperate in making a success of the first national medical congress which is to be held at Madrid, from October 13 to 18 of the current year. Leave of absence is to be granted to all to attend the meeting, when it does not conflict with the service. The navy is also empowered to appoint a committee to organize a special navy exhibit as an auxiliary to the congress. This meeting is organized with the distinct purpose of founding the Spanish Medical Association, under official auspices, to form a permanent organization to hold annual meetings thereafter in different medical centers of the country. Already 800 physicians have sent in their names, and an attendance of 2,000 is anticipated. A scientific and welfare work exhibition, to be kept open a month, is to open with the congress.

CENTRAL AND SOUTH AMERICA

Eighth Brazilian Medical Congress.—The Academia Nacional de Medicina has the preparations well under way for the eighth Brazilian medical congress to convene in September of this year at Rio de Janeiro.

The Arteaga Ward.—One of the wards of the new Garcia Hospital at Havana has been named in honor of Dr. Serapio Arteaga, a leading obstetrician of Havana in his day and professor of gynecology and obstetrics in the university. His portrait was installed with much ceremony in the new ward recently. His son is editor of the *Revista de Medicina y Cirugia.*

CORRECTION

Health Officer of Aberdeen, S. Dak.—In the issue of THE JOURNAL for April 13, under the heading of South Dakota, appeared the following personal item: "Dr. Thomas B. Christian, South Bend, Ind., bacteriologist and pathologist, has been appointed city health officer of Aberdeen." We have since been informed that it was Dr. Louis Holtz, bacteriologist and pathologist of the city hospital of Springfield, Ohio, who was appointed health officer of Aberdeen.

ARGENTINE LETTER

Buenos Aires, March 14, 1918.

Mortality from Tuberculosis

The mortality from tuberculosis in the last four decades has dropped from twenty-seven per ten thousand inhabitants to 17.4. The lowest point was reached in 1913, when it was only 16.4, but it has progressively risen since. This increase in the mortality coincides with conditions created by the war.

Official Organ of the State Bacteriologic Institute

This institution, an important department of the national public health service, located at Buenos Aires, has recently started the publication of a quarterly review. The first issue was indexed and reviewed in the foreign literature department of The Journal, March 16, 1918, p. 819.

Impressions of a Trip to the United States

Dr. R. Finochietto of Buenos Aires has returned from a visit to the principal surgical clinics of the United States, and is publishing in the *Semana Medica* the impressions received. North American surgery has acquired prestige in Argentina, especially among the younger set of surgeons.

Cancer Mortality

According to data published recently, the mortality from cancer during the last thirty years at Buenos Aires has been eighty per hundred thousand inhabitants. The annual number of cases has declined since 1887.

Reduction of Mortality from Infectious Diseases

The statistics in regard to infectious diseases at Buenos Aires, published by Dr. E. R. Coni in the *Semana Medica* for Dec. 13, 1917, show a considerable reduction in recent years. In the decade from 1877 to 1886 the mortality per ten thousand inhabitants was 332; in 1887-1896, it was 354. Then it dropped to 111 in 1897-1906, and finally to 66, in 1907-1916. As already mentioned in The Journal, page 1045, the mortality from smallpox has reached the vanishing point, the proportional mortality in the decades cited being respectively, 140, 100, 42, 8 and, during 1916, 0, since no deaths from smallpox were reported during that year. This result is due to intensive compulsory vaccination.

Vaccination Against Rabies

The report of the Antirabies Institute at Buenos Aires, embracing the last thirty years, was published recently in the *Semana Medica*, Feb. 14, 1918. Of the total 19,609 persons given treatment, ninety-eight died, that is, 0.049 per cent. Of this number, only sixty-two died later than fifteen days after completing treatment, that is, 0.031 per cent. The injections of medulla tissue are given twice a day, the scale being: 10/9, 8/7, 6/5, 5/4, 4/3, 3/2, 1; 4/3, 2/1; 4/3, 2/1; 3/2, 1; 3/2, 1.

CUBA LETTER

Havana, April 10, 1918.

The Cure of Leprosy

A little over a year ago a farm laborer, a native of the Canary Islands and for many years a resident of Cuba, claimed that he had discovered a wonderful cure for leprosy; he said that he himself, who had been a leper, was cured. His method was at first kept a secret, and he began to advertise, saying that he wanted only glory and no money. The newspapers sent their reporters to interview this magician of medical science, and they for some reason or other praised the man and his wonderful discovery. In fact, his medicine is chaulmoogra oil given by mouth suspended in a decoction of some herbs, and he claims that he can administer a thousand drops of the oil without the untoward results noted when the drug is given alone.

The Academy of Sciences, the Society of Clinical Studies, and the Board of Health of Cuba appointed a joint commission to study the procedure for the cure of leprosy discovered by this man, Mr. A. Garcia, who said that he could restore any patient to complete health in three months. He was given eight months to prove his assertion, and several patients from the National Leper Hospital were placed under his treatment; when the eight months had elapsed the commission reported that Hansen bacilli were still present in all cases, that there was very little if any improvement in all the patients, and that Mr. Garcia's treatment, therefore, was not at all curative. Mr. Garcia's friends raised a storm against the commission, saying that the patients were greatly improved and that the presence of Hansen bacilli in all the cases was of minor importance.

We think that we are facing a case of plain quackery, for we positively know that this man is making money on his supposed discovery for the cure of leprosy, and even more, we know of several cases of lupus vulgaris, syphilis, psoriasis, etc., treated by this man under the diagnosis of leprosy.

New Clinics

Drs. E. Fortun and B. Souza have established a new surgical clinic in Havana.

Dr. L. Huguet has recently opened an obstetric clinic in Vedado, Havana.

The School of Preventive Medicine

At the fourth National Medical Congress, held at Havana, last December, Dr. J. F. Pazos read a paper suggesting the founding of a school of preventive medicine and hygiene, a proposition that has since been seriously considered. The Society of Clinical Studies and the Academy of Sciences support Dr. Pazos' idea. We consider the creation of a school where Cuban physicians may be especially instructed in hygiene and sanitation almost a necessity. Here in the tropics we are forced to fight incessantly many diseases, such as malaria and typhoid fever, and it would be very convenient to have a corps of scientifically trained men for this purpose. At present, those engaged in this work are self-trained men or those who have gone abroad for their studies.

Malaria Appears in Camagüey Province

Dr. F. Villuendas has been commissioned by the Central Board of Health of Cuba to eradicate malaria from Ciego de Avila and suburbs (Camagüey), where many cases of malaria have been reported. Dr. Villuendas is already working with a brigade of sanitarians and several ambulances, and his reports are very satisfactory.

New Hospital for Children

The corner stone of the first hospital for children was recently laid in Pinar del Rio City. This is the first of the six hospitals to be constructed, one in each of the six provinces of Cuba. At present the children of this country have a seaside sanatorium at Cogimar (Havana Province) besides the regular wards in the hospitals.

LONDON LETTER

London, March 26, 1918.

Opening of a New American Hospital in London

In the presence of a distinguished company, which included Admiral Sims of the U. S. Navy, Sir William and Lady Osler, Surg.-Gen. Sir Alfred Keogh and Sir Robert Jones, the American ambassador opened the American Red Cross Hospital No. 24 (the fifth to be opened in this country) at Kensington Palace Gardens. It has been presented and equipped and will be maintained by Mr. and Mrs. A. Chester Beatty of New York. The hospital is auxiliary to the British military orthopedic hospital at Shepherd's Bush. The medical and nursing staffs are entirely American. There are eight wards, and accommodation for thirty-six orthopedic patients. The color scheme of eider downs and screens is pale blue in some wards, golden brown in others and rose in the remainder, and the walls are oyster white. The wards bear the names of famous Americans—George Washington, Stonewall Jackson, Robert E. Lee, U. S. Grant, Abraham Lincoln, Alexander Hamilton, Thomas Jefferson and Benjamin Franklin. Ambassador Page said that it was a great honor, not only for himself but for his government, to thank Mr. and Mrs. Chester Beatty for the generous service they had done in giving this house for use as a hospital, and in themselves paying the expenses. Until needed for American wounded it would be filled with British and colonial patients, and the donors, like all true Americans, would be as pleased that this use should be made of it as if it were to be used for the healing of their own soldiers. It brought home to them what this terrible conflict meant. "Let us," he continued, "fortify our courage and strengthen our resolve under God not to waver until this grim and righteous business be done with, and let us dedicate ourselves to the noble ideals our armies fight for, and do all we can to further the cause that is at stake in this critical time."

Tetanus in Home Military Hospitals

In a previous letter (The Journal, Jan. 5, 1918, p. 45) was given an analysis by Sir David Bruce, on behalf of the

Tetanus Committee of the War Office, of the cases of tetanus treated in the home military hospitals and the conclusions to be drawn from them. He has now published an analysis of 100 further cases. The death rate was 29 per cent. as against 19 in the previous analysis, which was by far the lowest of the series. Sir David Bruce thinks that the present mortality is little more than can be expected from the prophylactic and therapeutic use of antitetanic serum, and that it now remains with the surgeons to do the rest. It should not be "beyond the ingenuity of man to devise some form of surgical treatment which will prevent the development of gas gangrene or tetanus in wounds." Eighty of the cases belonged to the generalized type of tetanus; of these, twenty-nine were fatal, while in the twenty localized cases, all the patients recovered. Thirten cases of tetanus ocurred after operative interference with the wound, and nine of them were fatal, a death rate of 72.7. In none of these was a prophylactic inoculation of antitetanic serum given before the operation, although the Tetanus Committee has advised that when operations are performed at the site of wounds, even if they are healed, a prophylactic injection of serum should invariably be given. With our present knowledge, Sir David thinks, it is a question as to whether a surgeon who neglected this prophylactic injection would not render himself liable to an action for malpractice. Notwithstanding the Tetanus Committee's advice in favor of the intrathecal route and of the evidence from animal experiment, the intramuscular route is steadily becoming more popular. This, he thinks, is scarcely to be wondered at, since in the latest edition of a well known textbook on medicine the intramuscular route is strongly recommended; its ease and freedom from danger are doubtless in its favor.

Transmission of Trench Fever by the Louse

In a recent letter (THE JOURNAL, Feb. 23, 1918, p. 553) the results of a committee appointed by the War Office to inquire into the nature of trench fever were given. This investigation was made in France and was altogether clinical. Another committee working at home, under the chairmanship of Sir David Bruce, has made a remarkable discovery as to the etiology. In view of the widespread belief that the body louse conveys the disease, experiments were made. Lice bred from "clean stock" were fed on trench fever patients. Two volunteers, men well over the military age, and therefore unable to serve their country in more strenuous ways, came forward from patriotic motives. The lice were fed on them, the shortest interval between this and feeding on the trench fever patient being six hours. This experiment was continued daily for a month at least 500 lice being used every day, but no positive results were obtained. At a meeting of the committee the question was asked, Did these men scratch themselves? It was found that they did not, and, indeed, purposely refrained from doing so. This excluded to a large extent infection by means of excreta or crushed bodies of the lice. Two more volunteers were therefore found. In the case of one an area of skin 1 inch square was scarified, and a small quantity of the dried excreta taken from the boxes of lice that had fed on trench fever patients was dusted on this area and rubbed in. Nine days later the man was suddenly attacked with typical trench fever. On a scarified area of the other man's arm, eleven lice taken from a trench fever patient were crushed. Eleven days later he was attacked with trench fever. The fever which these men developed was indistinguishable from that produced in other volunteers by injection of whole blood from trench fever patients. In view of the importance of this discovery, the experiment was repeated on three other men with positive results. The chain of evidence was completed by the fact that a small quantity of blood taken from one of these and inoculated into another volunteer produced trench fever. In every case the fever, though mild, was yet typical of trench fever—sudden onset, temperature of 103 F., pain in the head and limbs, and over the spleen, the initial attack of fever lasting two or three days, and followed in practically every case by a relapse or relapses at an interval of usually seven days; the fever in the relapse being lower and more transient, with a recurrence of the symptoms associated with the initial attack. This observation is of great importance in view of the prevention of the disease, and would explain cases of trench fever arising in wounded men who may have had no lice on them for some weeks, as the dried excreta, if blown on a raw surface, would readily give rise to the disease. Some further experiments on the migration of lice are also of great interest. It has been shown that if two men are available, one with a normal temperature and the other with fever, the lice will leave the fever patient and pass quickly to the man with the normal temperature. Experiments are now in progress with the excreta of normal lice, as it is possible that the disease is not necessarily carried from man to man by lice but simply from louse to man.

The Smallpox Outbreak in London

The number of cases of the smallpox outbreak in the East-End of London now amounts to twenty-seven. The greatest care has been taken in tracing "contacts." It was thought until a few days ago that they were all under observation and that therefore no further serious spread would occur. It was then ascertained that a person suffering from smallpox in its earliest stages spent several hours in an air-raid shelter. As not all the contacts with this person can be found, further extension of smallpox is not unlikely. Every person living in or near localities in which cases of smallpox have occurred, who has not been successfully vaccinated since childhood, is enjoined to secure this protection.

PARIS LETTER

PARIS, March 21, 1918.

Operative Treatment of War Fractures

Dr. Dupuy de Frenelle, surgeon at the hospital Péan, recently discussed the operative treatment of war fractures before the Society of Surgeons of Paris, and dwelt particularly on the coaptation of the fragments. From the very first, the surgeon should aim to bring the bone ends together with the largest contact surface possible in order to maintain the permanence of their contact. The degree of perfection of the coaptation will be proportional to the degree of operative disinfection of the coaptated surfaces. Nothing is so dangerous as to join hermetically surfaces which are still infected. For the coaptation, cut the ends of the fragments on a long and broad bevel; a notch may render the coaptation more solid. Coaptation with a transverse section is more difficult to maintain. Frenelle avoids sawing off the jagged edges, preferring to employ the rongeur or gouge. The employment of the plaque is equally indicated. Coaptation by reciprocal impaction is excellent, but the disinfection must be complete. Coaptation by the implantation of a beveled stump in the medullary canal of the stump by a transverse section will be the more solid the longer the pointed fragment. It must be certain before having recourse to this procedure that the disinfection of the implanted fragments is perfect. If there is any doubt, open widely the marrow canal over the inserted fragment. A V-shaped suture, or, in certain cases, tying a wire around, will render the implantation more solid. In the coaptation of fractures in three fragments, the chief object of the surgeon must be to preserve an intermediate fragment; but Frenelle said that frequently in war surgery the surgeon must do the best he can. He is often obliged in the course of his intervention to modify the plane of the freshening of the bone ends, and the direction of the cut that he had proposed to make, basing his action on a careful study of the stereoroentgenogram and a thorough clinical examination.

The Oil Boils of Shell Turners

At the last meeting of the Academy of Medicine, Dr. George Thibierge called attention to a lesion now frequently seen and known by the name of "oil button" (*bouton d'huile*), an affection characterized in its more advanced stages by rounded pustules from 2 to 8 mm. in diameter, slightly raised, with resistant walls and containing a thick pus. The pustules after being opened leave for a week or two a gaping opening surrounded by a light inflammatory areola which disappears slowly. These lesions are found on the hands, the forearms, the face and places directly exposed to contact with lubricants, and also on parts of the body in contact with oil soaked clothing, especially the anterior surfaces of the thighs. The present necessity in industry of using as lubricants various oils of inferior quality having irritant properties, and which because of their scarcity must be reused without proper purification, favors the production of the "oil button." This lesion has a slow development, and is preceded by the progressive obliteration of the gland mouth, and must be considered, according to Thibierge, as an occupational malady and not as an industrial accident.

Air Raids and the American Red Cross

During the last air raids on Paris, the different services of the American Red Cross particularly distinguished themselves. In these instances their ambulances arrived first at the points of fall of the bombs. In addition, the managers

have informed the chief of police that they are prepared to care for victims, who, without being wounded, find themselves without shelter and in need. Furthermore, an emergency station for victims of bombs containing *gas asphyxiants* has been organized by the American Red Cross on the Place de la Concorde in Paris.

Medical Aid in Case of Air Raids

M. Mourier, under secretary of state for the army medical department, in conjunction with the director of the Service de Santé of the military government of Paris, has taken the following measures to secure medical aid to the population of Paris in case of bombardment: A permanent military medical day and night service in the twenty-four barracks and central stations of the fire department, having for its object the rapid transport of the wounded to a first-aid post or to a surgical center. All sanitary formations of the military government of Paris will constitute first aid stations. Surgical service will be provided, besides, in the public hospitals. All the wounded whose condition shall necessitate surgical intervention will be transported by ambulance to a surgical center. The Service de Santé of the military government of Paris will have in reserve supplementary surgical teams of nurses to be sent by automobiles to the point where their services are required.

Franco-Anglo-American League Against Cancer

There has been formed under the presidency of Justin Godart, formerly undersecretary of state for the military Service de Santé, a Franco-Anglo-American league against cancer, having for its object the establishment of centers for the treatment of cancer patients and to pursue scientific researches in cancer, to propagate among the public elementary knowledge concerning this malady, and to create centers of teaching. Three centers are being now organized: at Montpellier, under the direction of Professor Forgues; at Lyon, under the direction of Professor Bérard and of Auguste Lumière; at Bordeaux under the direction of Professor Chavannaz.

The "House of the Little Ones"

There has been inaugurated at Paris a hospital for infants of early age called the "Maison des Petits." This new hospital of twenty-five beds has been founded by two Americans, Mrs. W. B. Elkins and Mrs. Laws, under the auspices of the New York Committee of the French Heroes' Fund. It is intended for infants suffering from maladies of nutrition. The infants will be cared for by American nurses under the direction of Miss Neilsen, of Bellevue Hospital, New York, with whom French nurses have promised to join. It is also proposed to care for infants at their homes when conditions are sufficiently favorable to assure their recovery at home.

Suppression of Alcoholism

The commission of propaganda through the press of the National League Against Alcoholism came together recently under the presidency of M. Chailley, formerly deputy. Frédéric Riémain, secretary general of the league, has solicited the aid of the press for the campaign of prohibition. After an exchange of observations, the commission decided, in case the prohibition of alcohol is not voted by the governments, to support all amendments having for their object the effecting of a diminution in the consumption of alcohol.

Personal

At the last session of the Academy of Medicine, an election was held to fill the places of Dr. Duguet and Professor Reclus in the section of internal pathology and external pathology, respectively. To the former Dr. Pierre Teissier was elected by 55 out of 62 votes, and to the latter, Dr. Felix de Lapersonne was elected by 49 out of 61 votes.

Unilateral Arthrotomy with Primary Total Suture of Wounds of the Knee Joint

At a recent meeting of the Paris Société de chirurgie, Dr. H. Barnsby reported twenty cases of unilateral arthrotomy along a lateral margin of the patella with primary suture, including seven cases with included fragments and gross lesions of the femoral epiphysis (unicondylar), and two cases of comminuted fracture of one lateral half of the patella.

After having been long an ardent partisan of extensive arthrotomy with a U-shaped incision, Barnsby now reserves that incision (horseshoe shaped) for the following cases: (1) severe lesions of the upper articular surface of the tibia; (2) lesions of both condyles; (3) complete comminuted fracture of the patella, and (4) embedded projectiles, difficult or impossible of removal through a lateral opening. In all other cases, especially severe fractures of one condyle or of a lateral half of the patella, one can and should be content to make the single incision along one of the lateral borders of the patella. This procedure causes less trauma of the architecture of the joint, and a return of normal function is obtained more rapidly. The lateral incision is made at least 1 cm. behind the border of the patella, and should be short, if it is a question of removing a free foreign body or one driven into the synovia or the cartilage, and large if it is a question of an osseous lesion.

If it is a patellar lesion, the leg should be placed in extension; if it is a condylar lesion, the leg should be placed in a flexed position during the operative intervention. The loss of bone tissue may or may not be supplied by fragments of cartilage; the functional result is equally good. The ether bath should be applied in both instances. The primary suture should be complete without drainage.

EXERCISING THE KNEE

Barnsby immobilizes the knee for nine days in a simple splint. The day following the removal of the sutures, active mobilization or motion is begun, the patient being recumbent. With the assistance of a simple stirrup of adhesive plaster and a cord passing through a pulley and supporting a weight of from 2 to 6 kg., the patient commences to flex the knee joint as far as possible. This exercise is done twice daily, morning and evening, for ten minutes each time. If properly instructed, the patient soon will be able to do this for one hour, morning and evening, and even three times daily. When the extreme limit of flexion is attained, a specially made cushion maintains this position for fifteen or twenty minutes. Right angle flexion was obtained, without any complications, within twenty days in nine of the ten cases. He has never seen any case of effusion requiring many punctures. This active mobilization, which makes the patient "walk in his bed," is the method of choice in the advanced centers where operations are done on joints only when there are several wounds, such patients being often in shock, and bed rest being compulsory.

Association News

THE CHICAGO SESSION

Clinics for Visiting Physicians

The chairman of the subcommittee on clinics, Dr. Charles E. Humiston, reports that satisfactory progress is being made in the work of arranging for the clinics for the Fellows of the Association on June 6 to 11. Forty of the hospitals of Chicago are cooperating with the committee. In addition to the usual clinical demonstration of diseases and surgical procedure at the hospitals, there will be demonstrations and exhibits of laboratory and other diagnostic measures at the medical schools as well. The committee is also perfecting arrangements which will permit visitors to attend the autopsies held daily at the Cook County Hospital. A detailed schedule of these clinics is being arranged which the committee expect to make available to interested Fellows in a short time.

Marriages

LIEUT. FRANK GARM NORBURY, M. R. C., U. S. Army, Boston, on duty at Camp Devens, Mass., to Miss Mary Elson Barnes of Jacksonville, Ill., at Jacksonville, April 11.

LIEUT. HERBERT SETH ANDERSON, M. R. C., U. S. Army, Burlingame, Calif., on duty at Camp Kearny, Linda Vista, Calif., to Miss Linda Jessop of San Diego, April 6.

LIEUT. ROBERT DU RANT HARDEN, M. R. C., U. S. Army, San Francisco, to Miss Hermina Gardner Lathrop of Palo Alto, Calif., at Alta Vista, Calif., April 4.

HUNTER S. WOODBERRY, University, Va., to Miss Ruby Fontaine Davis of Enon, Va., at University, Va., April 7.

LEWIS STOCKTON WALTON, Altoona, Pa., to Miss Edith Christie Baldrige of Hollidaysburg, Pa., April 6.

LIEUT. HOWARD HOGE WARNER, M. R. C., U. S. Army, to Miss Ruth Stone, both of Baltimore, April 10.

Deaths

Irving Allison Watson, Concord, N. H.; University of Vermont, College of Medicine, Burlington, 1871; aged 66; a Fellow of the American Medical Association; president of the New Hampshire Medical Society in 1903; secretary and executive officer of the state board of health since its organization in 1881; formerly secretary of the American Public Health Association; president of the International Conference of State and Providential Boards of Health, in 1903; assistant secretary general of the first Pan-American Medical Congress, and an honorary member of many American and foreign scientific bodies; author of many papers on medicine, and sanitary subjects; died at his home, April 4.

Cyrus B. King, Pittsburgh, Pa.; Jefferson Medical College, Philadelphia, 1862; aged 78; a member of the Medical Society of the State of Pennsylvania; formerly emeritus professor of principles of surgery and clinical surgery in the University of Pittsburgh; formerly superintendent of the West Pennsylvania Hospital, and the Pittsburgh Soldiers Home; for many years a member of the staff of the Allegheny General Hospital, and the Children's Memorial Hospital; formerly consulting surgeon at the McKeesport Hospital; died at his home, April 9, from paralysis.

Died in the Service
IN FRANCE
LIEUT. PERRY S. GASTON, M. R. C.,
U. S. ARMY, 1889-1918

Bennett Graves Henning, Memphis, Tenn.; Bellevue Hospital Medical College, New York City, 1870; aged 68; formerly Fellow of the American Medical Association; formerly professor of principles and practice of medicine, and clinical professor of diseases of the rectum at the Memphis Hospital Medical College; a member of the board of directors of the Presbyterian Home Hospital, Memphis; died at Florence Villa, Fla., March 30.

Lieut. Frederick Neel Henderson, M. R. C., U. S. Army, Rockville, Md.; University of Pennsylvania, School of Medicine, Philadelphia, 1903; aged 37; a Fellow of the American Medical Association; formerly president, and up to the time of his death, secretary and treasurer of the Montgomery County Medical Society; on duty at Fort Oglethorpe, Ga.; died in a base hospital, April 8, from cerebrospinal meningitis.

Lieut. Perry S. Gaston, M. R. C., U. S. Army, Newcastle, Pa.; Jefferson Medical College, 1912; aged 28; a Fellow of the American Medical Association. Dr. Gaston was killed in action, April 7. He enlisted in June, and was called to duty in August, being sent immediately to England and attached to the British Medical Service. It is reported that he was with the British forces about Amiens when he was killed.

Died in the Service
AT CAMP UPTON, N. Y.
LIEUT. GUSTAF LEWIS NORSTEDT, M. R. C., U. S. ARMY, 1892-1918
(See The Journal, April 6, p. 1023)

Martin Krotoszyner, San Francisco; University of Leipzig, Germany, 1887; aged 56; a Fellow of the American Medical Association; vice president of the Section on Genito-Urinary Diseases of the American Medical Association; a member of the American Urological Association; formerly urologist to the German Hospital, San Francisco; was shot and killed in his office, April 20, by one of his patients.

Lieut. Julian Neal Dow, M. R. C., U. S. Army, Arcola, Ill.; Bennett Medical College, Chicago, 1915; aged 24; on duty with the British Field Hospital Service; was killed while on duty in France, March 27.

Andrew J. Rodman, Delavan, Wis.; Rush Medical College, Chicago, 1865; aged 87; formerly a member of the State Medical Society of Wisconsin; died suddenly at the home of his daughter, about April 1, from diabetes.

Died in the Service
AT FORT OGLETHORPE, GA.
LIEUT. FREDERICK NEEL HENDERSON, M. R. C.,
U. S. ARMY, 1881-1918

William B. Scott, Cumberland City, Tenn. (license, Tennessee, 1889); aged 70; president of the Cumberland City Bank; died at his home, about March 28, from heart disease.

Thomas B. Fernalld, Norwich, N. Y.; University of Buffalo, 1889; aged 54; a member of the Medical Society of the State of New York; formerly a coroner and village health officer for several years; died at his home, March 26, from cancer.

Thomas Smith Shouse, Mount Eden, Ky.; Hospital College of Medicine, Central University, Louisville, 1892; aged 50;

Died in the Service
IN FRANCE
LIEUT. EDWARD LELAND MOONEY, JR., M. R. C.,
U. S. ARMY, 1892-1918
(See The Journal, April 20, p. 1182.)

formerly a Fellow of the American Medical Association; died at his home, about March 31, from diabetes.

James Edward Buckley, Chicago; College of Physicians and Surgeons, University of Illinois, 1905; formerly a Fellow of the American Medical Association; died in Washington, D. C., April 2, from wounds, self-inflicted.

Died in the Service
AT CAMP LEWIS, WASH.
CAPT. MALCOLM J. DENNEY, M. R. C.,
U. S. ARMY, 1872-1918

Marius Emmet Robinson, Goldsboro, N. C.; Washington University School of Medicine, Baltimore, 1870; aged 70; a member of the Medical Society of the State of North Carolina; died at his home, March 24.

Frederick Perley Jones, Mill Village, N. H.; New York University Medical College, 1878; aged 64; a member of the New Hampshire Medical Society; died at his home, January 18, from cerebral hemorrhage.

Capt. Malcolm J. Denney, M. R. C., U. S. Army, Portland, Ore.; University of Oregon School of Medicine, Portland, 1897; aged 46; died, March 27, at Camp Lewis, American Lake, Wash., from pneumonia.

R. H. Payne, Richland, Iowa; College of Physicians and Surgeons, Keokuk, 1863; aged 81; formerly a member of the Iowa State Medical Society; died at his home, February 10, from arteriosclerosis.

Valter P. Stevens, Poulan, Ga.; University of Louisville, Medical Department, 1891; aged 46; formerly a member of the Medical Association of Georgia; died at his home, April 2, from pneumonia.

Alfred Herbert Tanner, Brooklyn, Conn.; Bellevue Hospital Medical College, New York City, 1874; aged 65; a member of the Connecticut State Medical Society; died suddenly, March 29.

Joseph Dodson Lomax, Troy, N. Y.; College of Physicians and Surgeons, New York City, 1862; for many years superintendent of the Marshall Infirmary of Troy; died about March 23.

Sutherland Douglas Twining, Springfield, Mass.; Yale University, Medical Department, New Haven, Conn.; 1864; died in the Buffalo State Hospital, February 8, following a fracture.

James Thurston Martin, Sacramento, Calif.; University of Michigan, Homeopathic School, Ann Arbor, 1883; aged 67; died at his home, March 29, from heart disease.

Died in the Service
IN FRANCE
LIEUT. JULIAN NEAL DOW, M. R. C.,
U. S. ARMY, 1894-1918

James H. Noyes, Ogden, Iowa; Columbia University, College of Physicians and Surgeons, 1861; aged 81; died at his home, January 31, from senile debility.

Frank Mortimer Gier, Hillsdale, Mich.; University of Michigan Medical School, Ann Arbor, 1884; aged 59; died at his home, March 28, from uremia.

Asa F. Goodrich, St. Paul; Hahnemann Medical College and Hospital, Philadelphia, 1889; aged 52; died at his home, March 29, from pneumonia.

John E. Meadors, Mahon, La.; Medical College of Georgia, Augusta, 1857; aged 82; died at the home of his daughter in Homer, La., March 25.

Thomas S. Parker, Cohoes, N. Y. (license, New York, years of practice); aged 80; died at Cohoes (N. Y.) Hospital, March 19.

William Henry Hills, Chelmsford, Mass.; Harvard University Medical School, Boston, 1869; aged 77; died in Florida, March 30.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

NOSTRUMS IN RETROSPECT

A Review of Worthless or Unscientific Proprietary Mixtures Previously Criticized

[FOREWORD.—The article that follows is the ninth[1] of a series written for the purpose of reviewing the findings of the Council on Pharmacy and Chemistry on certain unscientific or worthless proprietary mixtures advertised to physicians. Although the preparations taken up in this series have been dealt with in previous reports, the fact that they are still widely advertised and prescribed indicates the need of further publicity. The writer of the series is thoroughly conversant with the work of the Council on Pharmacy and Chemistry and can speak authoritatively on questions dealing with the actions of drugs in the treatment of disease.]

[ARTICLE IX]

NEUROSINE AND THE ORIGINAL PACKAGE EVIL

By S. O. Lapius, M.D.

We called attention recently to the skill which the nostrum vender displays in avoiding the particular thorn that pricks him, and his development of the art of impressively saying "Nothing in General," as exemplified in the advertisements of Fellows' Syrup. Nostrum sellers are more canny than original and when once an idea finds lodgment with one of them, it is made to serve many masters. Formerly exploiters of either vicious or worthless nostrums were wont to boast that their preparations were exploited in a "strictly ethical manner." Recent perusal of as choice a lot of advertisements as can be found in the most degraded of medical journals failed to disclose this claim in a single instance, although the claim that a preparation is "advertised only to physicians" is still common.

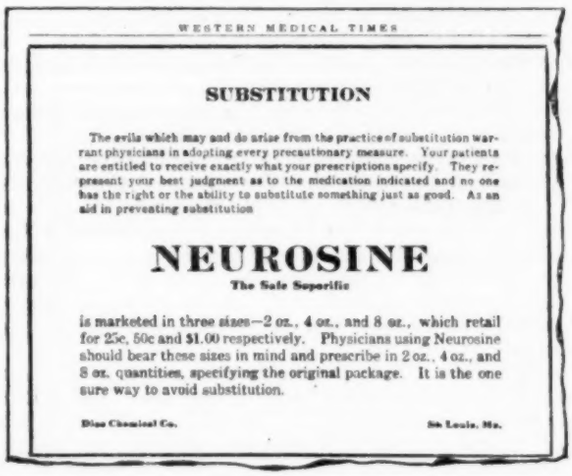
The advertisement of "Neurosine," which we reproduce, was the first one which came to our attention when we searched through some medical journals for one that would illustrate a discussion of the "original package" evil. This is the only reason for selecting Neurosine rather than another. Such half-page advertisement and others of similar size in various medical journals cost a good deal of money and they presuppose that the Dios Chemical Company is interested in having original bottles of Neurosine dispensed every time that that nostrum is prescribed.

Why should the firm have any such deep interest in seeing that an original *bottle* gets to the patient? Why should it be necessary to do anything more than see that the genuine *mixture* reaches the patient? Does it seem within the bounds of reason that substitution is so commonly practiced by pharmacists that this firm must go to large expense to prevent the substitution of spurious mixtures for its product? Is dishonesty the rule among pharmacists? Common sense rejects the plea as placing too great a strain on one's credulity. Obviously, then, the advertisement does not tell the whole truth, though it does indeed tell exactly what the nostrum maker wishes to have done, that is, to have only *original bottles* dispensed when physicians prescribe that nostrum. The fact we have; the reason is not far to seek.

When the pharmacist puts up an ordinary, nonproprietary prescription, the patient gets no clue from the package as to the nature of the prescription employed. But when an original bottle of Neurosine is dispensed, even though the pharmacist puts his own prescription label on it, the patient sees the difference at once and knows just why the usual prescription bottle was not employed. He also knows that he can get the medicine with its original wrapper or label by merely showing the bottle to the druggist, for the words "Neurosine" and "Dios Chemical Co.," are blown in the glass. Here, then, may be a plausible reason for desiring that only original bottles be dispensed.

You may ask: "What difference does it make if the patient does learn the name of the nostrum, he must go to his physician for advice concerning its use?" Having learned the name of the remedy that has been prescribed for sleeplessness, let us say, he proceeds to use it whenever he imagines that he needs it, and that need, real or imaginary, has a way of increasing in frequency. As a result, the patient takes far more Neurosine than the physician would think of permitting if the matter had not passed entirely beyond his control.

Not only has the patient acquired a dangerous habit of self-prescribing, but he takes especial delight in recommending his favorite remedy to friends whose symptoms, real and imaginary, seem to resemble his own. This offers him an opportunity to prescribe with an air of authority. It was prescribed for him by Dr. Blank, and it gave relief, *ergo* it may be depended on to give relief to others! Thus is the basis laid for its general use by the laity, when this process



WESTERN MEDICAL TIMES

SUBSTITUTION

The evils which may and do arise from the practice of substitution warrant physicians in adopting every precautionary measure. Your patients are entitled to receive exactly what your prescriptions specify. They represent your best judgment as to the medication indicated and no one has the right or the ability to substitute something just as good. As an aid in preventing substitution

NEUROSINE

The Safe Soporific

is marketed in three sizes—2 oz., 4 oz., and 8 oz., which retail for 25c, 50c and $1.00 respectively. Physicians using Neurosine should bear these sizes in mind and prescribe in 2 oz., 4 oz., and 8 oz. quantities, specifying the original package. It is the one sure way to avoid substitution.

Dios Chemical Co. St. Louis, Mo.

is multiplied sufficiently. The statement is susceptible of easy proof by any one who cares to investigate the matter for himself. There is probably no physician worthy of the name who will attempt to deny that the promiscuous use of hypnotics and narcotics is dangerous, and certainly no careful physician will deliberately place a narcotic in the hands of patients to be used freely and without control.

Since we have selected Neurosine at random, so far as this particular discussion is concerned, it is worth while to inquire into its composition, the claims that have been made for it and the evidence, if any exists, for or against its therapeutic value. Even the most active of hypnotics are worse than useless if they are inferior to other readily available hypnotics, or if they have undesired side-actions that outweigh any advantages that they might otherwise have.

The Council on Pharmacy and Chemistry investigated the literature relating to Neurosine and published its report in THE JOURNAL, Jan. 9, 1915, p. 165. According to this report the manufacturers of Neurosine claimed that each fluidounce contained:

Bromid of potassium, C. P.	40	grains
Bromid of sodium, C. P.	40	grains
Bromid of ammonium, C. P.	40	grains
Bromid of zinc	1	grain
Extract lupulin	32	grains
Cascara sagrada, fl. ex.	40	minims
Extract henbane	0.075	grain
Extract belladonna	0.075	grain
Extract cannabis indica	0.60	grain
Oil bitter almonds	0.60	grain
Aromatic elixir		

1. The previous articles of the series are "Bell-ans," THE JOURNAL, Nov. 24, 1917; "Anasarcin and Anedemin," Dec. 8, 1917; "Pepto-Mangan," Dec. 29, 1917; "Cactina Pillets," Jan. 19, 1918; "Ammonol and Phenalgin," Feb. 2, 1918; "Fellows' Syrup and Other Preparations of the Hypophosphites," Feb. 16, 1918; "Shotgun Nostrums," March 2, 1918; "Tyree's Antiseptic and Aseptinol," March 30, 1918.

This chemical blunderbuss was recommended for use in insomnia, hysteria, neurasthenia, migraine, neuralgia, delirium tremens, epilepsy and many other conditions. Also it was called an ideal calmative for children suffering from chorea, the exploiters claiming that "All authorities recommend the bromids, hyoscyamus and cannabis indica in this disease." Oliver T. Osborne, Professor of Therapeutics in Yale Medical School, does not mention one of these three drugs in his discussion of the Medicinal Treatment of Chorea, in the "Handbook of Therapy," though he quotes several authorities in this article. Indeed he does not mention one of the ten drugs included in the above formula of Neurosine in connection with the treatment of this disease. It is a curious fact that Osborne gives the greatest prominence to the use of that drug which is claimed to be wanting in the formula of Neurosine, viz., hydrated chloral.

Perhaps you may have seen temporary relief follow the administration of Neurosine in chorea, and may argue that theorizing is of little value in the face of personal experience. We shall not deny that some may have had that experience, for Osborne calls attention to the fact that the success of any medicinal treatment must be judged in the light of the fact that chorea is self-limited, and the intensity of the symptoms will abate in from two to four weeks. In view of this we would hardly dispute the claim that one may administer narcotics, such as those contained in Neurosine, and the symptoms of chorea may abate in spite of such mistreatment. In all the years that Neurosine has been exploited to physicians with such remarkable claims, we have never seen a report of a careful clinical study in which the product has been used under the conditions which scientific investigation demands. Would you prescribe any nonproprietary preparation which had never been studied clinically, if a horse-shoer or grocer's boy told you it would cure epilepsy or malaria?

According to an editorial note appended to the report of the Council on Neurosine the Dios Chemical Company consisted at that time (1915) of J. H. Chambers, his wife and two sons. It appeared that Chambers never claimed to have any special knowledge of chemistry, pharmacy or medicine, yet we find that he arrogated to himself or to his employees the right to offer therapeutic advice to the medical profession, and even to direct them how they should prescribe a given mixture.

We sometimes fail to see the forest because of the trees. It may help us to obtain a better perspective, in a problem that concerns us intimately, by resorting to a hypothetical case, if a close analogy is maintained. In order that we may see ourselves as others see us in such a situation let us consider the following imaginary case: You become involved in a lawsuit in which an effort is made to deprive you of your property and your liberty. You seek what you had reason to believe was competent legal advice but nevertheless you lose your case and find yourself deprived of your property and your liberty. Now let us suppose further that you discover, when too late to permit you to correct your mistake, that your legal adviser (we can hardly call such a man a lawyer) had been acting all along under the guidance of a plumber who made no pretense of knowing anything about law. How would you feel regarding that pretended lawyer? Would you feel that you had been treated fairly? Would you feel disposed to speak with all charity of him, to recommend him to those in need of legal advice?

You would probably feel toward such a lawyer as patients must feel toward physicians who prescribe proprietary nostrums based on information and advice offered by those who, though without any special knowledge of chemistry, pharmacy or medicine, will be benefited financially if their information and advise are accepted and acted on.

Plauge.—There were thirty epidemics of bubonic plague between the eleventh and fifteenth centuries. The worst one in Europe was in the fourteenth century. The population of Europe was about 105,000,000 in 1334; the "Black Death" started from China. It killed nearly 24 per cent. of the people in Europe—that is, almost every fourth person was doomed. It is said to have killed half the population of Italy.

Correspondence

A METHOD OF FACILITATING THE SERUM DIAGNOSIS OF SYPHILIS UNDER WAR CONDITIONS

To the Editor:—Supplementary to the paper with this title, published last week, p. 1157, permit me to add the following suggestion: According to Rhamy (THE JOURNAL, Nov. 17, 1917, p. 1728), guinea-pig complement can be preserved in a mixture consisting of 1 part of the fresh guinea-pig serum and 1.5 parts of a 10 per cent. sodium acetate solution in 0.9 per cent. saline for a considerable length of time at room temperature, and the acetate does not interfere with the fixation reaction. The writer has confirmed Rhamy's statement and can add that the same is true of human complement. By mixing fresh serum with the acetate saline solution in equal parts the complement remains perfectly active at room temperature for at least five days, and the results of the tests made with the acetated serums are no different from those obtained with the same specimens in fresh state without the acetate. It is advisable, therefore, to preserve a specimen intended for transportation for some distance in a sodium acetate saline solution while the specimen is perfectly fresh. Thus, the serum may be mixed with an equal part of the 10 per cent. sodium acetate saline solution and 0.2 to 0.4 c.c. of the mixture used for the test, this amount representing 0.1 to 0.2 c.c. of the pure serum.

Sodium acetate may also be added directly to the blood while the patient is being bled for the test. A sterile stock solution containing 50 per cent. sodium acetate and 0.9 per cent. sodium chlorid is prepared, and when bleeding the patient, 0.5 c.c. of the solution is mixed with 4.5 c.c. of the blood in a graduated tube (or any plain tube with a mark for 5 c.c.). The separation of serum is slow and may be hastened by gently breaking up the clot. For the test 0.1 to 0.2 c.c. of the serum is used.

Another important point is the fact that the test can be carried out at any temperature between 21 C. (70 F.) and 37 C. (98.6 F.), provided that the mixture be allowed to stand for two hours at 21 to 25 C. (70 to 77 F.) and one hour at 30 C. (86 F.). During the warm seasons or in subtropical or tropical countries, therefore, no special incubator is required, although an incubator is absolutely necessary when the temperature in the laboratory falls below 21 C. It may be mentioned that a strongly positive serum completes the fixation of complement within twenty minutes at the temperature of 21 C., or that of the ordinary laboratory room. It is for weaker reactions that the time of standing for two hours is being allowed. As stated above only one hour is sufficient when the temperature is about 30 C. Fluctuation in temperature within the minimal and the optimal points during the incubation is of no consequence.

HIDEYO NOGUCHI, M.D., New York.

THE OWEN-DYER BILLS FOR INCREASED RANK OF MEDICAL OFFICERS

To the Editor:—The bills now pending before Congress for increased rank and authority for the medical officers of our Army are of as grave importance as any measures that have been presented since the American nation entered the present war, for on their adoption or rejection may depend the final issues of the conflict, especially if the war is greatly prolonged. When it is remembered that the Medical Department of the Army has to combat a foe that in all the great wars of history, excepting the Russo-Japanese, has caused 80 per cent. of the entire mortality—never less than four times, and often twenty times, as many as the artillery, infantry, shells and all other methods of physical destruction combined—then the responsibility and importance of the medical officer in war will be appreciated.

The department that he represents has never had the necessary authority to enable it to reduce this frightful 80 per cent. mortality to a minimum, and without in any way interfering with the strategy or military operations of the war.

The Medical Department of our Army is founded on the traditions of the British medical department of 1776, when preventive medicine was an unknown science and when the duty of the medical officer was to cure disease, instead of preventing it—of locking the stable after the theft has been committed.

Our medical officers have never had the necessary rank and authority to prevent the development of epidemics and other diseases that have caused the frightful mortality incident to war. Witness the records of the Spanish-American War in Cuba and Porto Rico and in the Philippines, which practically typify the conditions that existed in the Boer War in South Africa, in our own Civil War of 1861-1864, in the Russo-Turkish War, and in the British campaign in the Crimea.

The Porto-Rican expedition in the opera bouffe performance known as the Spanish War may be taken as an example, for nowhere in history is there found a more illuminating instance, a graver lesson, or a more terrible warning than is there portrayed. For our country, it is the Mene, Mene, Tekel Upharsin, the handwriting on the wall, so easily decipherable that he who runs may read; and yet, in the glory of victory and the enjoyment of prosperity, its lesson has passed unheeded.

The story of the expedition is brief. About 20,000 American troops landed in Porto Rico, while the Spanish on the island numbered about 17,000. Several skirmishes occurred, in which, according to the Surgeon-General's report, three men were lost from the casualties of war. The object of the war, the breaking of the chains of Spanish despotism and spoliation, which for centuries had held a race in shameful moral serfdom, was soon accomplished, and the war—from the strictly military standpoint—was over. From our first arrival, the natives of the island welcomed our battalions with vivas of applause, strewing our advancing march with flowers, and their masses were prepared joyfully to second our efforts for their complete emancipation.

That is the beautiful story history presents. Lest we forget as a nation, and lie supine in the easy content of this picture, let me invite attention for a moment to a further study of the report of the Surgeon-General for that war. It states that although only three men fell from the casualties of battle during that entire campaign, 262, or nearly 100 times as many, died from preventable causes. It fails, however, to state that the number of hospital admissions nearly equaled the entire strength of the invading army, and that the camps of the army from one end of the island to the other, were pestiferous hotbeds of disease before they had been occupied a month, so that, had the bugle sounded for action, only a small percentage of the units would have been in a condition to respond to the call. Nor was this state of affairs confined to Porto Rico. In the invading armies of the Philippines and Cuba the same conditions prevailed.

The official figures, as shown on the following table, were furnished me by the Surgeon-General of the Army, Oct. 10, 1905, and cover the vital statistics of the United States military expeditions for the year 1898:

	Deaths from Battle Casualties	Deaths from Disease
In the Philippine Islands	17	203
In Porto Rico	3	262
In Cuba	273	567
In the U. S. home camps, etc	...	2,649
Total deaths	293	3,681

or about one from casualties to thirteen from disease.

The report further shows that, while the average mean strength of the army enlisted for the Spanish War was about 170,000, the total number of admissions to the hospitals, Sept. 10, 1898, was more than 158,000, or 90 per cent. This in a war of less than three months' duration, and in which more than three fourths of its soldiers never left the camps of their native land.

The Japanese army for the same period had about 4 per cent. hospital admissions, or one twenty-second as many.

The vast difference in favor of the Japanese figures illustrates the value of a medical and sanitary department properly equipped to enforce practical sanitation, dietary and other preventive measures.

The greatest tragedy of war lies, not in the battle field, but in the failure of a government to protect its guardians from preventable disease, thereby immeasurably increasing the suffering and mortality incident to it. This can be largely prevented by giving the medical officer authority to enforce sanitation and supervisory control over the ration of the troops.

Every death from preventable disease is an insult to the intelligence of the age. If it occurs in the army, it becomes a governmental crime. The state deprives the soldier of his liberty, prescribes his hours of rest, his exercise, equipment, dress, diet and the locality in which he shall reside, and in the hour of danger expects him, if necessary, to lay down his life in defense of its honor. It should, therefore, give him the best sanitation and the best medical supervision the science of the age can devise, be it Japanese or Patagonian—a fact of which Congress will do well to take cognizance at the earliest moment. For, just as surely as the engineer who disregards the signals, or the train dispatcher who gives wrong orders, is legally responsible for the loss of human life in the wreck that follows, so Congress, or the wretched medical system of our Army, is responsible for the thousands of soldiers' lives needlessly, criminally sacrificed—not on the glorious field of battle, but in diseased camps—from preventable causes.

Herbert Spencer, in his "Synthetic Philosophy," refers to "the ill treatment accorded the medical officers of the English army as a late survival of the days of feudalism, and contempt for the purely scientific."

If wars are inevitable, and the slaughter of men must go on (and I believe wars are inevitable and that most of them are ultimately beneficial), then let our men be killed legitimately, on the field, fighting for the stake at issue, not dropped by the wayside from preventable disease as we did in the Spanish-American War—1,300 for every hundred that died in action. It is for the 1,300 brave fellows that are needlessly sacrificed, never for the hundred that fall gallantly fighting, that I offer my prayer.

I believe that if our Medical Department, in the Spanish-American War, had been systematized, with sufficient numbers, with supervisory control over the ration, and with power to enforce sanitary and hygienic relations, the units of our Army would have returned to their homes at the close of the campaign in better physical condition than when they entered it, improved by their summer outing.

An army might be suffering from diarrhea or slight intestinal catarrh, due to change of water, of ration or of climate (and I have seen 90 per cent. of an entire command in this condition at one time), compelled to live on a diet of pork and beans and fermented canned foods that in six weeks prostrated 50 per cent. of its number with intestinal diseases and sent 3,000 to their everlasting homes, to say nothing of the enormous number invalided, and the 75,000 pension claims that followed as the result. Until the men were admitted to hospital wards, the medical officer had no authority even to order a rice diet, which would have prevented the men from becoming invalided. This was one of the principal causes that brought our Army of 170,000 men in the Spanish War almost to its knees in three months, and sent the survivors home in the shrunken and shriveled condition that many of us still remember.

In all the wars in which the United States has engaged, disease has been responsible for more than 70 per cent. of the mortality, more than half of which could have easily been prevented, had the Medical Department been properly empowered to meet its obligations. Preventable disease, more than wounds, swells the pension list. Statistics of the Pension Office prove that if this unnecessary loss had been avoided, the saving in pensions alone, in every war in which America has participated, would have paid the cost of the resulting war every twenty-five years. Aside from the sorrow of the homes made desolate, consider the economic value of

the 70 per cent. of lives needlessly sacrificed, that might be saved as breadwinners in industrial pursuits.

In an address delivered before the International Congress of Military Surgeons in 1904, after my return from the Russo-Japanese War, I said: "Perhaps the day is not distant when another summons will come to join the Army of the Republic, when the first call may be, not as in the Civil War for 75,000 men, nor as in the Spanish War for 250,000, but when, more likely it will be for a round half million, to be followed possibly by another of equal number. And the question will be asked by the young patriot of that day, not *who* the enemy is he is to meet—No, the American boy is *not* built that way—but he will demand to know what measures have been taken to insure him against the silent enemy who kills the 80 per cent. And when he learns the same prehistoric regulations as to sanitation and protection against this foe are in force as they were in 1904, will he respond to his country's call? Yes, he will, for that is the way the American boy is built. And he will follow, as did his forebears, in their footsteps, and he will fall by the wayside as they did before. And history will record another crime."

> We see by the light of thousands of years,
> And the knowledge of millions of men,
> The lessons they learned through blood and in tears
> Are ours for the reading, and then
> We sneer at their errors and follies and dreams,
> Their frail idols of mind and of stone,
> And call ourselves wiser, forgetting, it seems,
> That the future may laugh at our own.

Let Congress give the medical officer rank and authority in all matters appertaining to sanitation and preventable disease and supervision over the ration, when such authority will not interfere with the strategy of the commanding officer of the line, and then, if serious epidemics or other preventable diseases occur, have him courtmartialed and cashiered from the Army, as though he were a traitor and a spy.

Louis Livingston Seaman, M.D., LL.B., F.R.G.S.,
New York.
Late Surgeon-Major, U. S. Volunteer Engineers.

"BREVITY IS THE SOUL OF WIT"

To the Editor:—I have now been a reader of your valuable paper for more than a year, and do not see how I can possibly do without my weekly copy. The thing that kills the British medical journals is the length of their articles. It almost seems that every writer makes it his business to make his articles as long as he possibly can instead of the reverse. I trust, therefore, that you will not allow that vice to creep into The Journal. A busy man has no time to be bored with such long articles. I thought the article on "The Treatment of Hookworm Infection," published in The Journal, February 23, was rather long, and contained tables that might have been eliminated with a summary.

W. H. Haupt, M.D., Caterham, Surrey, England.

TOXICITY OF ARSPHENAMIN (SALVARSAN): REPORT OF CASES

To the Editor:—Having read a report by Dr. James C. Sargent of Milwaukee on five cases of unusual toxicity resulting from administration of the new American made salvarsan, I am constrained to report three cases, believing that this information should be given to the medical profession.

A man, aged 38, suffering from the secondary stage of syphilis, who had had three weekly 0.6 gm. doses of diarsenol with no toxic reactions following, reported for his fourth treatment. The first obtainable American made salvarsan had just reached us, and a dose of this was given after being mixed in the following manner: First the ampule was dissolved in 90 c.c. of hot sterile freshly distilled water, and sufficient cool freshly distilled water was added to bring the amount up to a 200 c.c. bulk. Freshly prepared 15 per cent. sodium hydroxid was added drop by drop, the solution being stirred constantly, until the precipitate was redissolved. The solution was given by the single tube gravity apparatus method into a vein at the bend of the elbow, this method having been used by us more than 400 times without a single bad result. Before one half of this solution had been given, the patient began to complain of severe pains in various parts of his body. He became prostrated, his pulse rapid and weak, and cold perspiration stood out over him. The patient became nauseated but did not vomit. The solution was discontinued, and blankets and hot water bottles were applied. After about three hours the patient felt almost normal but during this period he complained of more or less pain and showed signs of shock.

The second case was that of a man, aged 36, with an old long standing case of syphilis who was undergoing a series of arsphenamin treatments. He had had three weekly doses of diarsenol without any reaction. He was given a 0.6 gm. dose of American made salvarsan made up as in the preceding case. Just prior to the discontinuance of the injection of the full dose this patient began to complain of pains in various parts of his body, his face and eyes became intensely injected, and his face was slightly swollen. He was decidedly nauseated, but did not vomit. After about an hour he felt able to go home.

The third case was that of a boy, aged 17, who was being treated in the secondary stage of syphilis and had had two weekly 0.5 gm. doses of diarsenol with no reaction following. He was given a 0.5 gm. dose of the American made salvarsan one week following his second dose of diarsenol. Throughout the injection of the solution the patient felt well. About one minute after the discontinuance of the injection and while the patient was yet on the treatment table, his face flushed suddenly, and the eyelids, lips and tongue swelled to huge proportions. The tongue was so thick that he could scarcely protrude it. The eyes were injected, and he vomited freely. He complained of intense pain in various parts of the body, especially through the abdomen. The pulse was very rapid and weak. Immediately a 15 minim dose of epinephrin solution was given hypodermically. This dose was repeated in fifteen minutes. He was put to bed in the hospital and external heat applied. The swelling of the tongue, eyelids and face gradually subsided, and after about four hours had practically disappeared. The patient was able to leave the hospital in about six hours.

These three doses of American made salvarsan were the first doses that had been used in this hospital and, because of these reactions following their administration, we decided not to give the fourth dose, so returned the remainder of the shipment to the Farbwerke-Hoechst Company. They have acknowledged receipt of the returned shipment and have written us that they expect to make further investigations of the lot in an effort to determine where the difficulty is. They report that both biologic and chemical controls were perfectly satisfactory before releasing the salvarsan.

J. D. Willis, M.D.,
Lewis-Gale Hospital, Roanoke, Va.

[Comment.—The publication of the report by Dr. Sargent stimulated a number of physicians to write to The Journal on this subject. Mr. Metz, the manufacturer of the salvarsan brand of arsphenamin, in protesting against its publication said that "the lot from which Dr. Sargent's ampules were taken met every requirement of the standard set for salvarsan," and intimated further that the reactions were "due to faulty technic, unsatisfactory conditions of ingredients used in preparing the salvarsan solution, or condition of his subjects." Such experiences as those of Drs. Sargent and Willis are not unusual, but should be reported. It is, of course, well known that untoward results followed the use of the old salvarsan—that made in Germany. With the old preparation, as well as with the new, reactions occurred and were probably due to various causes: sometimes to faulty preparations, sometimes to the deterioration of certain ampules of a batch, sometimes to idiosyncrasy of the patient, and sometimes to faulty technic of preparation or injection. There is no reason to believe that the arsphenamin made in this country is more toxic or less satisfactory than that formerly imported from

abroad. The present provisions for the control and testing of the output of arsphenamin in this country appear to be quite satisfactory: The manufacturer is required, not only to test his product himself, but also to submit a certain percentage of each batch to the Hygienic Laboratory of the Public Health Service for a second test. Physicians may use the product with confidence, but if untoward results occur with any ampule of any preparation, the results should be reported in order that knowledge of the possibilities, improvements in technic or in handling a preparation of the drug may result. Let it be remembered that injection into a vein, no matter what the substance injected, is a serious procedure. When arsphenamin is the substance used, it involves not only the hazards of intravenous therapy but also the hazard of a potent drug. However, we repeat, when used with a complete knowledge of the method and the possibilities, there should be no lack of confidence in any of the federal licensed products.—ED.]

RADIUM TREATMENT OF CANCER OF THE LIP

To the Editor:—In the article by Dr. Henry H. Janeway on the treatment of cancer of the lip by radium (THE JOURNAL, April 13, p. 1051), he describes the method of treating cancer of the lip by emanation of radium in glass tubes instead of radium element in flat applicators and after reporting his splendid results states: "The superior adaptability of radium emanation for the treatment of cancer makes the use of the element itself obsolete, and for the vast majority of cases it is inefficient." I believe the use of radium element of the required strength scattered over a flat applicator 1 c.c. square is much more accurate and scientific than the use of emanation in glass tubes in treating lip cancer, as the flat applicator fits evenly over the region on the lip. It gives off a uniform quantity of rays and dose from different applicators so that results can be duplicated in other cases and by other persons. This can not be said of emanation used in glass tubes because even if a certain strength in millicuries is in the tube at the time of testing, the tube deteriorates rapidly and loses its strength. In a few hours, after a tube is tested the physician does not know the strength he is using. Moreover, the glass of different tubes varies greatly in thickness and further complicates the administration of a definite dose.

J. N. SCOTT, M.D., Kansas City, Mo.

HERPES ZOSTER AND CHICKENPOX

To the Editor:—The report of cases showing the relation between herpes zoster and chickenpox made by Drs. Goldberg and Francis in the April 13 number of THE JOURNAL recalled to my mind an experience I recently had which showed such a relation. On Feb. 15, 1918, a young lady came to my office with a typical case of herpes zoster following the course of the superficial nerves of the cervical plexus. March 3, I was called to see the patient's younger brother and found a well developed case of chickenpox. During February there were only fourteen cases of chickenpox reported in the city. Thirteen of these were in the extreme other end of town and one was about four blocks distant from my patient, and the child in that case went to another school. I am not able to find that my patient was ever exposed to chickenpox.

A. G. HOUGH, M.D., Madison, Wis.

"TONICS AND SEDATIVES"

To the Editor:—I wonder if any of your feminine readers have thought of cutting out "Tonics and Sedatives," binding them in loose leaf form and sending them to the Army hospitals. I have been doing this for two years, and they tell me the soldiers enjoy them; the heading is so appreciative too. I hope that others of your readers will follow this suggestion.

HELEN BATES, Summit, N. J.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ENLISTMENT IN M. R. C.—COMMUTATION FOR OFFICERS

To the Editor:—1. I am anxious to do my full part in this war. I note the call for 5,000 doctors. I am one of two shop surgeons looking after some 1,500 men. The other is under draft age, though claiming exemption on financial grounds. What is my duty as appears to one who has a view of the whole situation? 2. Is the enlistment period in the Naval Reserve three years, or for the length of the war? 3. What amount will be added to the salary of a first lieutenant if the maintenance bill is passed?

M. D., Omaha.

ANSWER.—1. The Surgeon-General has asked each physician to determine for himself the question as to whether or not it is his duty to enlist. In paragraph 5 of his call to the American Medical Association he says:

> It is earnestly desired that the interests of the civil communities be conserved as far as possible and that no enlistments in the Medical Reserve Corps be made that would work serious hardship upon any community, manufacturing concern or other civil activity by taking from such community, manufacturing concern or other civil activity, physicians whose services are needed for the efficient and competent care of the civil population or the employees of large concerns.

2. The physician who enlists in the Naval Reserve obligates himself, and may be immediately ordered, to service in the Navy throughout the war or during the existence of a national emergency declared by the President, should either arise during his term of enlistment. A member enrolls or reenrolls for a term of four years. In time of peace, and when no national emergency exists, a member may be discharged on his own request.

3. An item on this subject appears under Current Comment, this issue, p. 1232.

THE ACCEPTANCE OF COMMISSIONS

To the Editor:—In Current Comment (THE JOURNAL, April 13, 1918, p. 1098) I noticed a statement that there are approximately 18,300 members in the Medical Corps and about 1,500 men who have been offered commissions but have not yet accepted. Will you kindly tell me what I may imply by this statement, "commissions offered, but not yet accepted"? I would appreciate very much if you will communicate with me at your earliest convenience. I am contemplating going into the service, and want to get as much information about this matter as possible.

WILLIAM S. KELLER, M.D., Cincinnati.

ANSWER.—Before a commission is in effect it must be accepted in writing, and an oath of allegiance taken. Many have not done this, some not realizing its necessity, others through neglect, or because they want to back out of their contract. It is needless to say that such action is not creditable. If a man makes application for a commission in the Medical Reserve Corps and goes through all the preliminaries, including examination, he to all intents and purposes makes a contract to accept the commission if it is awarded him.

NO NATIONAL LICENSURE FOR RESERVE OFFICERS

To the Editor:—Does a physician, after being discharged from serving in the Medical Reserve Corps, have the privilege of practicing in any state in the Union?

W. H. H.

ANSWER—No.

To Send Serum by Mail for Wassermann Test.—R. Tsuneoka and T. Yotsumiya relate that a safe and certain means for sending serum to a laboratory for testing is to soak up the serum into blotting paper and allow the paper to dry in a dark room at a temperature of from 80 to 86 F. Serum thus dried into the blotting paper can be kept without deterioration for five or six days. When the test is to be applied the serum is dissolved out of the paper by soaking in sterile saline and squeezing the paper. An abstract of their article is given in the *China Medical Journal*, which publishes regularly, in pamphlet form, English abstracts of the leading articles in the current Japanese medical periodicals (Presbyterian Mission Press, Shanghai).

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Regular Board, Little Rock, May 14-15. Sec., Dr. T. J. Stout, Brinkley; Eclectic Board, Ft. Smith, May 13-14. Sec., Dr. C. E. Laws, Ft. Smith.

GEORGIA: Atlanta and Augusta, May 30-June 1. Sec., Dr. C. T. Nolan, Marietta.

HAWAII: Honolulu, May 6. Sec., Dr. G. A. Batten, Box 375, Honolulu.

ILLINOIS: Chicago, June 3-7. Mr. F. C. Dodds, Supt. of Registration, Capitol Bldg., Springfield.

KENTUCKY: Louisville, May 28-30. Sec., Dr. J. N. McCormack, Bowling Green.

LOUISIANA: New Orleans, June 6-8. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

MASSACHUSETTS: Boston, May 14-16. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

NEVADA: Carson City, May 6. Sec., Dr. S. L. Lee, Carson City.

NEW YORK: Albany, Buffalo and Syracuse. May 21-24. Sec., Dr. W. J. Denno, Education Bldg., Albany.

OHIO: Columbus, June 4-7. Sec., Dr. H. M. Platter, State House, Columbus.

Indiana January Examination

Dr. W. T. Gott, secretary of the Indiana State Board of Medical Registration and Examination, reports the written examination held at Indianapolis, Jan. 10-12, 1918. The examination covered 16 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 8 candidates examined, 4, including 1 osteopath, passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Indiana Medical College (Purdue University)		(1906)	83.5
Indiana University		(1917) 88.2; (1918)*	80.8
	FAILED		
Louisville National Medical College		(1909)	84.7†
Meharry Medical College		(1916)	71.4, 81.2†
National University, Athens		(1912)	‡

* Diploma and license withheld until June, 1918, to complete time credits.

† Fell below 75 per cent. in three subjects.

‡ This candidate's papers were not graded because he "was detected in flagrantly violating rules governing conduct of examination."

New Mexico January Examination

Dr. R. K. McClanahan, secretary of the New Mexico Board of Health and Medical Examiners, reports the written examination held at Sante Fe, Jan. 14-15, 1918. The examination covered 11 subjects and included 100 questions. An average of 75 per cent. was required to pass. Two candidates were examined, both of whom passed. Seven candidates were licensed on credentials, and 1 candidate was licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Loyola University		(1916)	75
Leonard Medical School		(1903)	75

College	LICENSED ON CREDENTIALS	Year Grad.	Total No. Licensed
George Washington University		(1907)	1
Rush Medical College		(1885)	1
Medical School of Maine		(1892)	1
College of Physicians and Surgeons, Baltimore		(1880)	1
Detroit College of Medicine and Surgery		(1917)	1
Memphis Hospital Medical College		(1913)	1
Vanderbilt University		(1913)	1

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
University of Oklahoma		(1914)	Oklahoma

New York Report

Mr. George M. Wiley, director, Examinations and Inspections Division, reports that 10 candidates were licensed by reciprocity from Jan. 7 to Feb. 27, 1918. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Georgetown University		(1911)	Delaware
University of Maryland		(1906)	New Jersey
Hamline University		(1907)	Minnesota
Columbia University	(1909) Pennsylvania;	(1910)	New Jersey
N. Y. Homeo. Med. Coll. and Flower Hosp.	(1913)	(1914)	Delaware
Jefferson Medical College	(1902) New Jersey;	(1903)	Penna.
University of Pennsylvania		(1901)	Penna.

North Dakota January Examination

Dr. G. M. Williamson, secretary of the North Dakota State Board of Medical Examiners, reports the oral, practical and written examination held at Grand Forks, Jan. 1-4, 1918. The examination covered 13 subjects and included 110 questions. An average of 75 per cent. was required to pass. Of the 6 candidates examined, 4 passed and 2 failed. Three candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College		(1916)	82
Keokuk Medical College, Coll. of Phys. and Surg.		(1905)	*
Johns Hopkins University		(1916)	85.3
University of Michigan Medical School		(1904)	*
	FAILED		
Bennett Medical College		(1908)	68
Chicago College of Medicine and Surgery		(1908)	70

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Baltimore Medical College		(1906)	Illinois
Hamline University		(1903)	Minnesota
John A. Creighton Medical College		(1905)	Nebraska

* No grade given.

Ohio Reciprocity Report

Dr. Herbert M. Platter, secretary of the Ohio State Medical Board, reports that 13 candidates were licensed through reciprocity at the meeting held Jan. 2, 1918. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Howard University		(1903)	Alabama
Bennett College of Eclectic Med. and Surg.		(1906)	Penna.
College of Physicians and Surgeons, Chicago		(1903)	Illinois
Hahnemann Med. Coll. and Hosp. of Chicago		(1873)	Illinois
Drake University		(1907)	Iowa
College of Phys. and Surgs., Baltimore		(1901)	W. Virginia
Johns Hopkins University		(1914)	Maryland
University of Michigan Medical School		(1908)	Michigan
University of Buffalo		(1911)	New York
Medical College of Ohio		(1892)	Kentucky
		(1901)	Indiana
Hahnemann Med. Coll. and Hosp. of Philadelphia		(1912)	New York
University of Pittsburgh		(1914)	Penna.

South Dakota January Examination

Dr. Park B. Jenkins, secretary of the South Dakota State Board of Health and Medical Examiners, reports the practical and written examination held at Pierre, Jan. 8-10, 1918. The examination covered 15 subjects and included 125 questions. An average of 75 per cent. was required to pass. Seven candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Chicago		(1900)	78.8
Northwestern University		(1915)	88.6, 89.2
Keokuk Medical College, Coll. of Phys. and Surgs.		(1907)	85.6
St. Louis College of Physicians and Surgeons		(1915)	79.3
Hahnemann Medical College of Philadelphia		(1876)	83.4
Jefferson Medical College		(1917)	86.2

Utah January Report

Dr. G. F. Harding, corresponding secretary of the Utah State Board of Medical Examiners, reports that at the meeting held at Salt Lake City, Jan. 7-8, 1918, four candidates were licensed through reciprocity. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Denver and Gross College of Medicine		(1905)	Colorado
Hahnemann Medical College and Hospital of Chicago		(1914)	Illinois
University of Illinois		(1916)	Ohio
Michigan College of Medicine and Surgery		(1904)	Michigan

Wisconsin February Report

Dr. J. M. Dodd, secretary of the Wisconsin State Board of Medical Examiners, reports that 3 candidates were licensed through reciprocity at the meeting held at Chicago, Feb. 4-5, 1918. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago		(1906)	Illinois
University of Illinois		(1914)	Illinois
Fordham University		(1915)	New York

Social Medicine, Medical Economics and Miscellany

Undernutrition Among Schoolchildren

As a result of the report of the bureau of child hygiene to the effect that between 12 and 15 per cent. of the schoolchildren of the city are underfed, Frank A. Manny undertook a detailed and intimate study of health and nutrition conditions among two schools in the Grammercy district. The children were classified on the basis of the Dumferline scale, which places each child in one of four nutrition grades: (1) superior condition; (2) passable condition; (3) requiring supervision; (4) requiring medical treatment. Of 2,535 children examined, one third of the total were in each of the first two grades, and the remaining third was divided between the other two. There were found three distinct height and weight measurements corresponding to the three larger nutrition grades, Grades 3 and 4 being taken together and containing one third of the whole. The average of the low nutrition cases fell below the passable group to about the same extent as the latter group fell below those of the superior group. The height and weight for the medium group was practically the same as the figures of the Boas-Burk tables of height and weight for American children. The heights and weights for the children of the superior grade followed closely the average figures for more than 30,000 children in private schools in New York City and Chicago, tabulated by Professor Baldwin. The conclusions are that, in this average industrial district, a third approximate closely the average of children whose parents can afford to pay tuition rates; a second third represents the average of American children, and the remaining third is seriously underdeveloped, being in many cases several years under the measurements proper to their ages under a reasonable standard of living. It has been shown that under conditions of abundant nutrition, exercise, air and sleep, stunted children in summer camps in the majority of cases improve rapidly up to the required average. The answer is that better parental incomes are necessary to prevent this undernutrition and substandard development.

Parenteral Injection of Milk

At a recent meeting of the Swedish Medical Association, G. Uddgren reported parenteral injection of human milk in about fifty cases of eye disease. Müller and Thanner reported fine results in their twenty eye cases a year ago, including four with parenchymatous keratitis. They even compared the results of this paraspecific treatment to the benefit from iridectomy in acute glaucoma, and Kühne insists it is one's duty to apply it, but Uddgren is not so enthusiastic. She declares that unquestionably there is something in this paraspecific therapy; applied with due caution it may give gratifying results. The benefit seems to be due to the focal reaction. In her work with it, the milk was derived from healthy wetnurses, and was boiled for five or ten minutes. The injection was repeated two months later, giving first a small preliminary injection, according to Besredka's technic. On account of the danger of milk embolus, the injection must be made very cautiously not to injure a blood vessel and thus let the milk get into the vein. In a few cases she used goat milk, and the results seemed equally good. The temperature rises a little in fifteen or twenty minutes but subsides in half an hour. At the end of the third, fifth and sixth hour it usually runs up again, reaching the maximum between the eighth and eleventh hour and then dropping as in crisis —all within the first twenty-four hours. There may or may not be pains; in some cases they resembled those of influenza. The pulse kept regular throughout, and the leukocytosis induced was not proportional to the temperature. It might be the same in the same person whether 0.5 or 2 c.c. of blood had been injected. As a rule, Uddgren applied this treatment only after failure of other measures. Most of the patients gave a positive Wassermann reaction. A. Steiger is said to have reported in the *Deutsche medizinische Wochenschrift* of recent date that parenteral injection of 10 c.c. of milk did not display the slightest efficacy in his experience with anthrax, furuncles and enlarged lymph glands.

Medicolegal

Providing for Treatment at Special Institutions of Tuberculous Paupers

(Inhabitants of Machias v. Inhabitants of East Machias (Me.), 102 Atl. R. 181)

The Supreme Judicial Court of Maine holds that the plaintiffs were entitled to recover payment for pauper supplies furnished a minor son of a family alleged to have a settlement in the defendant town, where the items consisted of "board, services and medical attendance" at Bangor Anti-Tuberculosis Camp, at Eastern Maine General Hospital, and at the Fairfield Sanitarium for Tuberculosis, a total expenditure of $476.11, covering a period of ninety-two weeks, or practically $5 per week. The court says that it was contended that as a matter of law these charges could not be recovered as pauper supplies; but the court finds itself unable to accede to that view. The statute provides that "overseers shall relieve persons destitute, found in their towns and having no settlement therein," and the expenses so incurred may be recovered of the town chargeable with the support of the pauper. The statute does not prescribe the manner in which, or the extent to which, the relief shall be administered. That must depend on the facts and conditions connected with each call for assistance. The governing rule is that the relief shall be reasonable and proper. It must be suited to the particular needs of the destitute person, whether they be food or clothing or shelter or medical or surgical assistance, or all together. So, too, the situation of the sick admits of such infinite variety that no arbitrary rule for their treatment can be laid down. While the right of reimbursement is purely statutory, being conferred by positive provisions of law, and is not based on any equitable considerations, yet it is the right and duty of the court to view the nature and extent of the relief in the light of present day conditions.

Nursing and medical services have always been deemed included in pauper supplies. The necessity of such services in the case at bar was admitted. Had they been rendered at the patient's home, perhaps no complaint would have arisen. The fact that they were rendered at an institution within the state specially equipped for the treatment of tuberculosis should not of itself place such services outside the pale of the statute. Such beneficial institutions were unknown a generation ago, but their worth is now universally conceded. The test in all cases must be the reasonableness and propriety of the relief provided, and it must certainly be admitted that nowhere can this particular disease, infectious in its nature, be more properly treated than in institutions such as these. Not only can relief be afforded, and the danger of infection avoided, but the patient may be restored to permanent health and a life saved to the community.

The expense incurred here, an average of $5 per week, including board, nursing and medical attendance, was not extravagant, and the misfortune of a father's pauperism ought not to deprive a sick child, in these enlightened days, of the reasonable means of treatment and care. Any other doctrine affronts the dictates of humanity. It was admitted that the overseers of the plaintiff town acted on the advice of a physician after his examination and treatment of the afflicted patient and on the recommendation of a visiting nurse. They evidently met the problem as they found it, and solved it with sound discretion.

Then it was contended that as the pauper was suffering from tuberculosis, which is declared by the Revised Statutes of 1916, Chapter 19, Section 9, an infectious and communi-

cable disease, this case should have fallen under the control of the local board of health, which under Section 69 of that chapter might place the patient in quarantine and charge to the town all supplies for food and medicines. But that contention was without force. Chapter 19 relates to the public health and the prevention of contagious diseases. It affects the affluent as well as the destitute. It had no application in this case.

Itemization Required of Physicians' Accounts

(*Willet Bros. v. Western Naval Stores Co. (Tex.), 198 S. W. R. 352*)

The Court of Civil Appeals of Texas reverses a judgment of dismissal, and remands for a new trial this case, wherein it was held that the accounts for medical services and medicines set out in the plaintiffs' petition were not sufficiently itemized, judgment being rendered on the pleadings, without testimony. One paragraph of the petition stated that at the special instance and request of the defendant, by and through its certain named agent, manager of its Camp No. 1, in Newton County, Texas, the plaintiffs did render medical service for and sell to the defendant medicine for Camp No. 1, as follows: "July 22, 1912. For Arthur Johnson, examination and medicine, $1.50." . . . "Oct. 12, 1912. For Auther Sapp, 1 visit and medicine, 8.75." The only just criticism that could be made of this paragraph, the court says, was the failure of the pleadings to state the amount charged for examination and the amount charged for medicine to the various parties, or the amount charged for the visit and the charge for medicine. These should have been separately charged, and, subject only to this criticism, this would be a proper averment.

Another paragraph, beginning similarly, but for Camp No. 2, contained, among other items, these: "June 28, 1912. For G. Green, examination, prescription, medicine, $10.15." "June 28, 1912. For Homer Ree, 5 visits, circumcision, medicine, 22.30." The court says that the items in this paragraph were subject to the criticism made on the preceding paragraph. In other words, the charge should be made for the visit, for the examination, for the prescription, and medicine, and the item of June 28, 1912, should have stated so much for circumcision, and so much for medicine. Except for this alleged vice, this paragraph would not be open to objection. In other words, the court means to say that it is not necessary to itemize the medicine, or the kind of medicine, but only the amount charged for the medicine, the amount charged for the examination, and the amount charged for the visit, and the amount charged for the prescription, and for the circumcision. No further itemization of the account would have been necessary or called for.

Likewise, the alleged vice in still another paragraph was that a charge should have been specified, stating what was made for the examination, and what was made for the medicine, and what charge was made for visits. In no further particular was it necessary for the items to be set out in the plaintiffs' pleadings. So far as pretending to itemize the services rendered, except that it was medical service, and the nature thereof, except that a visit was had, or circumcision had, no further particularity was needed with reference to the medicines and services, except the charges that were made therefor.

The court does not believe that the grouping of the facts, in the item, that the persons named were visited and medicine given, should be considered, save when so much was charged for medicine, and so much for a visit. But as the time had been given at which the charges were made, and as the plaintiff evidently knew how much he charged for a visit, he therefore was able, by a mathematical demonstration, to show how much was for a visit, and therefore how much remained in the charge for medicine. In the opinion of this court, therefore, there will be and can be no definite reason why the plaintiff cannot, even in the absence of any written memoranda, be able to state how much he charged for a visit, and how much for examination, and therefore how much he charged for medicine, at the various dates mentioned in the various accounts.

In the form as presented to this court, the exception was a general exception. It was error on the part of the lower court, some of the items being correctly pleaded, to dismiss the entire account and refuse to hear testimony with reference to the justice of it. This court believes that, on another trial of the cause, no trouble will be experienced with reference to the proper pleading, and that therefore the parties may be able, without real trouble, either before the court or before a jury, to have justice meted out to them in this cause.

Society Proceedings

COMING MEETINGS

American Medical Association, Chicago, June 10-14.

Alpha Omega Alpha Society, Chicago, June 10.
American Climatological and Clin. Assn., Boston, June 5-6.
American Dermatological Association, Philadelphia, May 23-25.
American Gastro-Enterological Association, Atlantic City, May 6-7.
American Gynecological Society, Philadelphia, May 16-18.
American Laryngological Association, Atlantic City, May 27-29.
Amer. Laryn., Rhin. and Otol. Soc., Atlantic City, May 29-30.
American Medico-Psychological Association, Chicago, June 4-7.
American Neurological Association, Atlantic City, May 9-10.
American Otological Society, Atlantic City, May 28-29.
American Pediatric Society, Lenox, Mass., May 27-29.
American Proctologic Society, Chicago, June 10-11.
American Surgical Association, Cincinnati, June 6-8.
American Therapeutic Society, Richmond, Va., June 7-8.
Arkansas Medical Society, Jonesboro, May 7-9.
Association of American Physicians, Atlantic City, May 7-8.
Conference of State & Prov. Bds. of N. Amer., Washington, June 5-6.
Connecticut State Medical Society, Hartford, May 15-16.
Illinois State Medical Society, Springfield, May 21-23.
Iowa State Medical Society, Fort Dodge, May 8-10.
Kansas Medical Society, Kansas City, May 1-3.
Massachusetts Medical Society, Boston, June 18-19.
Michigan State Medical Society, Battle Creek, May 7-9.
Mississippi State Medical Association, Jackson, May 14-15.
Missouri State Medical Association, Jefferson City, May 6-8.
Nat. Assn. for the Study and Prev. of Tuberculosis, Boston, June 6-8.
Nebraska State Medical Association, Omaha, May 7-9.
New Hampshire Medical Society, Concord, May 15-16.
New Jersey Medical Society, Spring Lake, June 25-26.
New York State Medical Society, Albany, May 21-24.
North Dakota State Medical Association, Fargo, June 19-20.
Oklahoma State Medical Association, Tulsa, May 14-16.
Oregon State Medical Association, Portland, June 27-29.
Rhode Island Medical Society, Providence, June 6.
South Dakota State Medical Society, Mitchell, May 21-23.
Texas State Medical Association, San Antonio, May 14-16.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Diagnosis, New York

October, 1917, **10**, No. 4

1 Diagnostic Value of Duodenal Tube and Roentgen Ray Findings in Ulcer of Stomach and Duodenum. C. Beck, Chicago.—p. 307.
2 Differential Diagnosis of Chronic Duodenal and Gallbladder Disease. J. Gutman, Brooklyn.—p. 309.
3 Syndrome of Conus Medullaris and Cauda Equina Apropos of Case of Hemilesion. A. Gordon, Philadelphia.—p. 319.
4 Prognosis of Heart Disease in Childhood. F. L. Wachenheim, New York.—p. 327.
5 Direct and Differential Diagnosis of Some of Commoner Syphilides. B. B. Beeson, Chicago.—p. 331.
6 Exophthalmic Goiter. I. Bram, Philadelphia.—p. 343.
7 Abnormal Uterine Hemorrhage in Young Women. A. McDonald, Duluth, Minn.—p. 361.
8 Diagnosis of Traumatic Neurosis in Relation to Litigation and Compensation. T. A. Williams, Washington, D. C.—p. 371.
9 Methods of Charting Physical Findings in Lung Diseases. E. Zueblin, Cincinnati.—p. 374.
10 Topographic Percussion of Chest Compared with Postmortem Findings. E. Zueblin, Cincinnati.—p. 380.
11 Prognosis in Pulmonary Tuberculosis. E. O. Otis, Boston.—p. 394.
12 Use of Tuberculin in Diagnosis of Eye Lesions. C. A. Clapp, Baltimore.—p. 399.

Archives of Pediatrics, New York

March, 1918, **35**, No. 3

13 *Some Problems in Starch Digestion in Infancy and Childhood. E. C. Fleischner and A. E. Meyers, San Francisco.—p. 129.
14 Acute Intussusception of Infants; Treatment Based on Modification of Hirschsprung Hydrostatic Method. L. Porter, San Francisco.—p. 142.
15 Case of Acute Lymphatic Leukemia with Necropsy. F. M. Holsclaw, San Francisco.—p. 151.
16 Juvenile Paresis; Report of Three Cases. R. L. Ash, San Francisco.—p. 156.
17 Clinical Opportunities in Juvenile Court Work with Girls. E. M. Watters, San Francisco.—p. 162.
18 Some Special Problems in Abnormal Adolescent Psychology. O. L. Bridgman, San Francisco.—p. 172.

13. **Starch Digestion in Infancy and Childhood.**—With a view of gathering data on the questions of starch intolerance and making observations on the capacity of young children to handle various forms of starch, Fleischner and Meyers made some food and feeding studies. Six children were selected about 4 years of age, on whom daily stool examinations were made for a period of about two weeks. They were all apparently normal children and their digestive capacity was likewise what might be expected in an average child. No directions were given as to the diets that the children should receive. They were kept on the usual food given to the children of their age. At the end of this time they were given potato twice daily to determine their tolerance for this type of starch. It was noted that the children were being fed a number of calories far in excess of their requirements for age and weight. However, they were apparently taking care of it and the percentage of carbohydrate was not excessively high. When the potatoes were started twice daily, the other starches were diminished and it is striking that their total carbohydrate intake was definitely less in spite of which they excreted much more starch in their stools. Several facts are emphasized by Fleischner and Meyers: (1) Incapacity to properly handle starches and celluloses is a very common disturbance of the digestive tract of young children. (2) A correct diagnosis can only be made by eliciting a careful history, ruling out other organic diseases by careful physical examination and finally by painstaking stool analyses. (3) The treatment of this condition is essentially confined to an adjustment of diet and institution of proper hygiene. (4) It is high time that pediatrists who have devoted so much attention to a careful supervision of the diet of the first years of life should realize that it is quite as important to carefully regulate the diet between the first and sixth years of life, not only qualitatively, but quantitatively, as the most potent prophylactic means of eradicating a very common form of malnutrition of childhood.

Boston Medical and Surgical Journal

April 4, 1918, **178**, No. 14

19 *Serum Conserved Dressing for Industrial Wounds. F. R. Williams, Worcester.—p. 452.
20 Health in War Industries. T. F. Harrington, Boston.—p. 453.
21 Some Relations of Exercise to Nutrition. G. Van Ness Dearborn, Cambridge.—p. 458.
22 Venereal Problem—Army Viewpoint. E. M. McKee, Ayer.—p. 467.

19. **Serum Conserved Dressing for Industrial Wounds.**—Williams has found that lacerated wounds heal more rapidly and with less trouble when treated as follows: When the wound is first seen the surrounding uninjured skin is cleaned with gasolene, and painted with tincture iodin full strength. No iodin is allowed to come in contact with the wounded surface. Wax is immediately applied. These wounds are dressed daily for the first few days, especially if there is much tissue destruction, but at these redressings the wound proper is not touched, consequently the so-called cleansing of its surface is omitted. An electric blower is applied as a drier, which has the advantage also of preventing the skin from becoming too blanched or parboiled. Burns will heal as rapidly under adhesive as under wax, but it is less easily applied and more expensive. Williams calls this procedure the serum retaining dressing. He says that the serum retained dressing is a rapid healer. Redressings are painless, hence without trauma. This is again conducive to rapid repair. In wounds treated as above outlined, excessive granulations are never seen. Sluggish wounds are also absent.

Georgia Medical Association Journal, Augusta

March, 1918, **7**, No. 11

23 Direct Method for Removal of Foreign Bodies from Air Passages. J. T. Maxwell, Savannah.—p. 233.
24 Pelvic Pathology as Causing Factor of Hysteria in Female. M. T. Benson, Atlanta.—p. 236.
25 Novocain in Surgery. W. A. Selman, Atlanta.—p. 238.
26 Benefits, Limitations and Dangers of Artificial Pneumothorax. E. C. Thrash, Atlanta.—p. 240.
27 Case of Epithelioma of Posterior Pharyngeal Wall, Cured by Electrocautery. D. Roy, Atlanta.—p. 242.
28 Late Syphilis, Diagnosis and Treatment. E. S. Osborne, Savannah.—p. 246.
29 Cirrhosis of Liver; Operative Technic; Report of Three Cases. L. S. Hardin, Atlanta.—p. 247.
30 Treatment of Constipation in Infancy and Childhood. W. L. Funkhouser, Atlanta.—p. 249.

Journal of Experimental Medicine, Baltimore

April, 1918, **27**, No. 4

31 *Nitrogen Metabolism and Acidosis After Transplantation of Ureter into Duodenum in Dogs. K. Goto, Philadelphia.—p. 449.
32 Method for Intravenous Injection of Guinea-Pigs. P. Rous, New York.—p. 459.
33 *Antiseptic Properties of Certain Organic Compounds. I. J. Kligler, New York.—p. 463.
34 *Elimination of Iron and Its Distribution in Liver and Spleen in Experimental Anemia. H. Dubin and R. M. Pearce, Philadelphia.—p. 479.
35 *Study of Blood Pressure by Method of Gaertner, Especially in Fibrillation of Auricles. A. E. Cohn and C. Lundsgaard, New York.—p. 487.
36 *Peripheral Blood Pressure in Fibrillation of Auricles. A. E. Cohn and C. Lundsgaard, New York.—p. 505.
37 Free Antigen and Antibody Circulating Together in Large Amounts (Hemagglutinin and Agglutinogen in Blood of Transfused Rabbits). P. Rous and O. H. Robertson, New York.—p. 509.
38 *Acute Mercuric Chlorid Intoxications in Dog with Special Reference to Kidney Injury. W. deB. MacNider, Chapel Hill, N. C.—p. 519.

31. **Nitrogen Metabolism and Acidosis After Transplantation of Ureter.**—This work was undertaken by Goto to study the metabolism in the dog after a ureter intestinal transplantation. Four dogs were originally operated on. Two showed kidney infection; the other two were not infected, and in these the metabolism was studied; one of the latter showed a marked hydronephrosis and hydro-ureter. The operative results were as follows: Both after the transplantation of the right ureter into the intestine and the ligation of the right ureter, there is generally a moderately increased output of nitrogen in the urine and, in the former instance especially, a retention of nitrogen in the blood, but no change in carbon dioxid content in the blood, probably an evidence of increased tissue catabolism. After removal of the left kidney subsequent to transplantation of the right ureter into the duodenum, renal insufficiency and resulting retention developed. The nonprotein and urea nitrogen in the blood steadily increased and the carbon dioxid content of the blood diminished to the level characteristic of a moderate acidosis. No ketones were found in the blood. The dogs died five to ten days after the nephrectomy under conditions characteristic of suspended renal activity—deep respiration, unconsciousness and sopor.

33. **Antiseptic Properties of Organic Compounds.**—A study of the inhibitive effect of anilin and some of its derivatives and of the triphenylmethane dyes on certain bacteria leads Kligler to conclude that the germicidal action of the compounds is a function of the benzene nucleus, the added elements or radicals, their number, and in the case of the dyes, probably the quinoid structure of the nucleus. So far as tested, the increase in the number of alkyl radicals increases the antiseptic power. Methyl green is an interesting exception to this rule, for the change of one of the nitrogens to the quaternary salt is accompanied by an almost complete loss in inhibitive action. The antiseptic power is enhanced to a greater extent by an ethyl than a methyl group, and the second alkyl produces a proportionately greater increase than the first. It appears that the relative position of the introduced group may be a factor in determining the relative

improvement in the effectiveness of the compound. The introduction of a methyl group in the nucleus consistently enhances the inhibitive action of the compound and its alkyl derivatives. This is evident from a comparison of the action of anilin and its derivatives with that of toluidin and its corresponding derivatives. The simple anilin derivatives, as well as the dyes, are more toxic for the gram-positive than the gram-negative bacteria. Of the former, *B. subtilis* is more sensitive to the dyes than *S. aureus*, while the reverse is true in the case of the anilin compounds. The most marked selective effect is manifested by the triphenylmethane dyes. *B. aerogenes* and *B. typhosus* possess a higher resistance to these substances than *B. coli* or *B. dysenteriae*. The last is exceedingly sensitive. This partial specificity is apparently a function of the molecule as a whole.

34. **Elimination of Iron and Distribution in Liver in Experimental Anemia.**—In the continuous blood destruction, essentially a chronic experimental anemia, caused by infecting the dog with *Trypanosoma equiperdum*, no increased elimination of iron was observed in the feces by Dubin and Pearce. The storage of iron in the liver and spleen under these experimental conditions is somewhat greater in amount, but of the same general character as in transient experimental anemia. Splenectomy before or after infection, that is, the development of anemia, influences neither the elimination of iron in the feces nor its storage in the liver. The retardation of the course of the trypanosome infection and thus the production of a more chronic anemia by treatment with a trypanocide, arsenobenzol, likewise does not affect iron storage. These experiments therefore have failed to reproduce the changes in iron metabolism seen in certain of the chronic hemolytic anemias of man.

35. **Blood Pressure in Auricular Fibrillation.**—The technic of Gaertner is shown by Cohn and Lundsgaard to be especially applicable to the study of the blood pressure in fibrillation of the auricles. The use of this technic has brought out a defect in the so-called fractional method of taking the pressure in this condition; the brachial and digital curves cross. Taking pressure of both brachial and digital arteries has shown that certain different types exist; first, that in which both central and peripheral pressures are stable; second, that in which the more central pressure is stable and the peripheral pressure fluctuates; and third, that in which both pressures fluctuate together.

36. **Peripheral Blood Pressure.**—Experiments on dogs showed that whereas the pulse pressure in the larger arteries (femoral) varies extensively, it varies within narrow limits only in the small ones (dorsal artery of the foot). These results supply an experimental explanation for the fact that in man uniform pressure readings were obtained by Gaertner's method at the digital artery. The experiments show likewise that in certain instances the level of pressure is maintained when fibrillation of the auricles sets in. It is therefore clear that when the mechanism of the heart beat in man changes to fibrillation of the auricles, a change, that is a fall, in pressure need not necessarily develop.

38. **Mercuric Chlorid Intoxications.**—In the acute mercuric chlorid intoxications which have been induced in dogs by MacNider death has been due either to the shock associated with the severe mercury enteritis or to a delayed kidney injury. The injury to the kidney has been constantly associated with the development of an acid intoxication. The delayed kidney injury is not due to the action of the mercury as such during its elimination by this organ. The manner in which mercuric chlorid induces an acid intoxication is under investigation.

Journal of Infectious Diseases, Chicago

April, 1918, **22**, No. 4

39 *Etiology of Epidemic Poliomyelitis. E. C. Rosenow and G. W. Wheeler, Rochester, Minn.—p. 281.
40 *Elective Localization of Streptococci from Epidemic Poliomyelitis. E. C. Rosenow, E. B. Towne and C. L. v. Hess, Rochester, Minn.—p. 313.
41 *Agglutination of Pleomorphic Streptococcus Isolated from Epidemic Poliomyelitis by Immune Serum. E. C. Rosenow and H. Gray, Rochester, Minn.—p. 345.
42 *Treatment of Fifty-Eight Cases of Epidemic Poliomyelitis with Immune Horse Serum. E. C. Rosenow, Rochester, Minn.—p. 379.

39. **Etiology of Epidemic Poliomyelitis.**—A pleomorphic coccus has been isolated from and demonstrated in affected tissues in all the cases examined of poliomyelitis that occurred in different epidemics and in widely separated parts of the country. Pure cultures of this organism have been isolated many times and it has been demonstrated in films and sections of brain and cord many months after they were placed in 50 per cent. glycerol. The authors hold that in view of these results the presence of this organism in the diseased tissues cannot be considered an accidental contamination. On injections of cultures into young rabbits and guinea-pigs it localizes specifically in the nervous system and produces flaccid paralysis and changes in brain and cord which resemble those in poliomyelitis in man. From the brain and cord of these animals the organism can be isolated and the disease again produced. The organism has been rendered filtrable. By means of the same methods the identical organism has been isolated constantly from the brain and cord of monkeys paralyzed with fresh, glycerolated and filtered virus. The serums of persons and of monkeys, having recovered from poliomyelitis, agglutinate specifically the more sensitive strains both from human and monkey poliomyelitis. Injections of the recently isolated aerobic cultures into monkeys renders them refractory to virus. The aerobic form of the organism from human and monkey poliomyelitis produces antibodies in the serum of horses, in a large amount common for both, cross-agglutinating these strains specifically in high dilution. The serum of a horse immunized with freshly isolated strains from monkeys protected monkeys relatively against intracerebral inoculation of virus and had pronounced curative effects in the treatment of human poliomyelitis. Early intravenous injections were followed by almost immediate cessation of symptoms in a large series of cases.

40. **Localization of Streptococci from Poliomyelitis.**—A thorough bacteriologic study of twenty-two cases, has shown that the streptococcus found so constantly in poliomyelitis tends to localize electively in the central nervous system in young guinea-pigs, rabbits, puppies and kittens, and less often in adult animals of these species and in adult monkeys. The symptoms and lesions produced resemble those found in poliomyelitis in man. Cultivation on artificial media, especially under aerobic conditions, usually destroys promptly the elective localizing power, as does successive animal passage. The results obtained indicate strongly that the streptococcus under consideration is not merely a secondary invader, but that it has etiologic significance in poliomyelitis.

41. **Agglutination of Cocci from Poliomyelitis.**—The results of this study further support the view that the elective localizing power of the pleomorphic streptococcus as first demonstrated by Rosenow, Towne and Wheeler, has significance and that it in some way bears etiologic relationship to epidemic poliomyelitis.

42. **Treatment of Poliomyelitis with Immune Horse Serum.**—Rosenow reports in detail the results obtained from the serum treatment of fifty-eight cases of poliomyelitis which occurred in Davenport, Iowa, and the surrounding locality during the latter part of the summer and in the autumn of 1917. Intravenous injections were made to the exclusion of intraspinal injections for the following reasons: 1. The best results were obtained by this method in the protection of monkeys against virus. The serum was activated for the same reason. 2. Invasion of the nervous system in poliomyelitis is only a part of a more or less generalized systemic infection (Flexner and his co-workers). This was particularly true in this epidemic. Infection of the tonsils, the cervical and mesenteric lymph glands and the gastrointestinal tract was often marked. 3. The spinal fluid in poliomyelitis is known not to contain the virus. The disease process is situated chiefly in the depths of the cord which can best be reached through the circulation, particularly if lymph drainage toward the spinal canal is promoted by the

withdrawal of spinal fluid. 4. Intraspinal injections of immune serum, human and horse, are known to be irritating and at times dangerous.

Altogether, 94 intravenous injections were made. In no instance was there a primary toxic action noticeable, and in only six (10 per cent.) was there later evidence of serum disease. If the temperature was normal no rise occurred, if above normal, an immediate drop without an initial rise was the rule, especially early in the disease. The low incidence of serum disease in this series, 10 per cent., as compared with the incidence of 33 per cent. in Nuzum and Willy's series, and apparently a more immediate beneficial effect, Rosenow suggests, may be due (aside from an apparently more powerful serum, the agglutinating power being much higher, smaller doses being necessary to be effective) to the fact that intravenous injections only were given. Altogether fifty-eight patients with poliomyelitis, irrespective of the severity or type of the disease, were treated. Of these, ten died, a total mortality rate of 17 per cent. Excluding seven of the fatal cases in which the patients were practically moribund at the time of the serum treatment, there were three deaths, a mortality of 6 per cent., in fifty-one cases in which the serum had a fair chance. This is in marked contrast to the twenty-three untreated patients, of whom nine died, a mortality of 35 per cent. Including the moribund patients as untreated, there were sixteen deaths in thirty, or a mortality of 53 per cent. Paralysis did not develop in a single instance when treatment was begun before its onset, and all recovered. No extension occurred following the giving of serum in the patients who recovered and in whom paralysis was marked at the time of the serum treatment. In only three or possibly four patients, or 8 per cent., receiving the serum will there be permanent impairment of function, and in all but one this will be slight.

Journal of Parasitology, Urbana, Ill.

March, 1918, **4**, No. 3

43 Studies on Illinois Cercariae. E. C. Faust, Urbana.—p. 93.
44 Studies on Screw Worm Fly, Chrysomyia Macellaria Fabricius in Panama. L. H. Dunn, Ancon, C. Z.—p. 111.
45 Methods of Asexual and Parthenogenetic Reproduction in Cestodes. T. Southwell and B. Prashad.—p. 122.
46 Excretory System of Agamodistomum Marcianae (La Rue), Agamodistome Stage of Forked-Tailed Cercaria. W. W. Cort, San Francisco.—p. 130.
47 *Natural Occurrence of Eosinophilias. S. Hadwen.—p. 135.
48 Three Unusual Cases of Parasitism (Slug, Myriapod and Cockroaches) Reported in Man. C. W. Stiles.—p. 138.

47. **Natural Occurrence of Eosinophilias.**—When the juices obtained from *Hypoderma* larvae, either diluted or otherwise, are injected under the skin of a susceptible animal, the first effect noticed will be local. At the point of injection a blisterlike spot will be seen, and a necrotic area will occur. In twenty minutes to half an hour, swelling will be noted. The necrotic spot in the center will be depressed. Smears made from the swelling some hours later reveal the presence of an eosinophilia, and if the material which was injected contained bacteria, phagocytosis by the eosinophils. This observation of phagocytosis by the eosinophils was made by Hadwen and certified by Dr. B. H. Ransom at Washington, D. C. The reason for the eosinophils assuming the rôle which is usually assigned to the neutrophils, is apparently because the bacteria are rendered attractive by their being bathed in the verminous juices. It is a well-known fact that, as a rule, in verminous anemias the percentage of eosinophils is high, but in some instances they may be very scarce. Weinberg and Séguin noted this in their experiments and suggest that the few eosinophils which were in the circulation had been attracted to the parts affected in order to repel a verminous invasion. Experiments are contemplated to determine what curative effects the injection of worm juices may have on such cases.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

March, 1918, **11**, No. 2

49 *Digitalis in Auricular Fibrillation. A. R. Cushny, London.—p. 103.
50 *Action of Tartrates, Citrates and Oxalates. Study in Tolerance, Cumulation and Effect of Diet. W. Salant and A. M. Swanson, Washington, D. C.—p. 133.
51 *Poisonous Action of "Asetake." K. Muto, Tokyo, Japan.—p. 147.
52 *Comparative Absorbability of Local Anesthetics from Urethra. T. Sollmann, Cleveland.—p. 159.

49. **Digitalis in Auricular Fibrillation.**—Two different types of effects were seen by Cushny in the mammalian heart under the action of the digitalis series. *A.* In the normal heart digitalis causes slowing through stimulation of the inhibitory center in the medulla, and if this is eliminated, the dominant feature is an increase in the excitability which leads to the inception of independent rhythm in the auricle and ventricle, and later to discharge from different points of the same chamber, which culminate in fibrillation. *B.* In the excised mammalian heart exhausted by prolonged perfusion with Ringer's solution, digitalis causes slowing and block which closely simulates that induced by inhibition in the normal heart, but which is not prevented by atropin and therefore arises from direct action on the heart. The pacemaker emits fewer impulses and these are still further reduced owing to impaired conduction to the auricle from the Keith-Flack node and to the ventricle from the auricle. The auriculoventricular block becomes further developed, the ventricular beats become slower and finally the chamber ceases in more or less complete systole without fibrillation. In auricular fibrillation in man, digitalis slows the pulse and this is independent of the inhibitory mechanism, for it is not prevented by atropin. In the mammalian heart in situ when auricular fibrillation is induced, strophanthin finally arrests the irregularity of the ventricle, by impairing conduction, but the pulse is not slowed owing to the accelerated idioventricular rhythm induced by the drug. In auricular fibrillation induced in the perfused heart, strophanthin renders the ventricle regular through impaired auriculoventricular conduction and at the same time slows its rate. The Type A, inhibitory slowing, occurs in man and animals with normal cardiac rhythm. The Type B, slowing through direct cardiac action, occurs in most cases of auricular fibrillation in man, in rare cases of normal rhythm in man, in the perfused mammalian heart, whether the normal rhythm is preserved or the auricle is fibrillating, and in the frog. The primary cause of the Type B in man and animals is the malnutrition of the heart; the auricular fibrillation merely favors its appearance by accentuating the fundamental cardiac malnutrition.

50. **Action of Tartrates, Citrates and Oxalates.**—The different behavior of tartrate, citrate and oxalate as regards tolerance and cumulation is held by Salant and Swanson to be unfavorable to the theory which assumes that the physiologic effects of their acids, and soluble salts, are due to calcium precipitation or to the transformation of ionic calcium into nonionized calcium in the cell.

51. **Poisonous Action of "Asetake."**—The experiments and observations made by Muto show that the poisonous action of "Asetake" (sweat fungus) agrees exactly with that of muscarin.

52. **Absorbability of Anesthetics from Urethra.**—The experiments reported on by Sollmann were made on male dogs, anesthetized with morphin and ether. The urinary bladder was exposed through a suprapubic incision. An opening was made near the neck of the bladder. Through this an elbow cannula of small lumen and thick walls was introduced into the posterior urethra, and tied in position. The exterior end of the cannula was connected with a small stop-cock, through which the injections were made. Another elbow cannula was tied into the urethral meatus and used for the collection of the urethral fluid. The anesthetics were used in the form of the hydrochlorids. Different animals vary rather widely in their absorbing power. To permit their comparison, an average of absorption was established for each series of observations, by averaging the percentage of absorption of the six drugs used. The relative absorbability of each drug is as a percentage of this "average of absorption." The absorbability of the hydrochlorids of the local anesthetics from the dog's urethra is in the ratio of: apothesin and beta-eucain = 86.6;

novocain = 97.6; cocain = 100; tropacocain = 105.0; alypin = 111.3. The rate of absorption increases with the dose and concentration; not only absolutely but also per cent. For instance, increasing the dose and concentration three and one-third times increases the absorption four and one-fourth times. The absorption is most rapid in the first ten minutes, but continues quite markedly even after this time. The absorption is not materially hastened by rendering the anesthetics alkaline.

Kansas Medical Society Journal, Topeka

March, 1918, **18**, No. 3

53 Consideration of Chronic Degenerative Myocardial Changes. F. A. Carmichael, Osawatomie.—p. 55.
54 Trachoma. F. L. McDaniel.—p. 61.
55 Toxemias of Pregnancy. E. G. Coyle, Coffeyville.—p. 63.

Medical Record, New York

April 6, 1918, **93**, No. 14

56 Manifest Pulmonary Tuberculosis. G. E. Bushnell, Washington, D. C.—p. 575.
57 Methods of Prevention and Control of Disease in War Industries. J. W. Schereschewsky, Washington, D. C.—p. 585.
58 Aid from Medical Profession in Prevention of Disease in War Industries. A. Stengel, Philadelphia.—p. 587.
59 Chronic Pneumonia; Report of Case. S. L. Wang, New York.—p. 590.
60 Physician Before the Law in Some European Countries. F. Robbins, New York.—p. 592.

Michigan State Medical Society Journal, Grand Rapids

April, 1918, **17**, No. 4

61 Dermatologic Malingering. H. R. Varney, Detroit.—p. 121.
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116 War Crisis and Industrial Surgeon. W. A. Evans, Chicago.—p. 386.
117 Medical Preparedness and Medical and Surgical Problems in this War. J. C. Bloodgood, Baltimore.—p. 389.

Philippine Journal of Science, Manila

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118 Bone and Joint Lesions of Yaws with Roentgen Findings in Twenty Cases. H. G. Maul, Manila.—p. 63.
119 *Infections with Coccidium and Isospora in Animals in Philippine Islands and Their Possible Clinical Significance. F. G. Haughwout, Manila.—p. 79.
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119. **Infections with Coccidium.**—Thirty-four well authenticated cases of human coccidiosis of recent occurrence were observed by Haughwout in Manila.

Public Health Journal, Toronto

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134 Early Diagnosis of Poliomyelitis. W. H. Lane, Brattleboro. —p. 59.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

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1 Innervation of Bladder and Urethra. E. G. Fearnsides.—p. 149.
2 Automatic Bladder, Excessive Sweating and Some Other Reflex Conditions, in Gross Injuries of Spinal Cord. H. Head and G. Riddoch.—p. 188.
3 Reflex Functions of Completely Divided Spinal Cord in Man, Compared with Those Associated with Less Severe Lesions. G. Riddoch.—p. 264.
4 Studies on Different Reactions (Lymphocytosis, Bisgaard, Ross and Jones and Wassermann) in Cerebrospinal Fluid in Cases of Syphilis. C. With.—p. 403.

British Medical Journal, London

March 16, 1918, **1**, No. 2985

5 Surgery at Saloniki. T. C. English and R. E. Kelly.—p. 305.
6 *Infected Wounds of Knee Joint. K. W. Monsarrat.—p. 311.
7 Prevention of Spread of Epidemic Disease at Schools. H. M. Fletcher.—p. 313.

6. **Infected Wounds of Knee Joint.**—Thirty-eight cases are reviewed by Monsarrat. Of 25 patients treated within four days of the receipt of the wound, 18 recovered without amputation; 4 recovered after amputation and 3 died. This shows a recovery of 72 per cent. without amputation. Of the 13 admitted on the fifth day or later, 4 recovered without amputation; 3 recovered after amputation and 6 died. This shows a recovery of 30 per cent. without amputation. Another point of importance showing the influence of early treatment is the recovery of function in the joint. Of the 22 patients surviving without amputation, 13 left the hospital with recovery of function in the joint—that is to say, with a greater or less range of voluntary movement. Of these 13 patients, 3 were admitted the day following the wound; 4 were admitted on the second day following the wound; 5 were admitted on the third day following the wound and 1 was admitted on the seventh day following the wound. It was in by no means always the least complicated case that there was a good functional recovery. These groups of figures indicate the urgency of operative treatment in infected knee joint wounds, and the fair results which may be expected in cases so treated.

Punctured, penetrating wounds of the joint with effusion are not included in this paper. All that is required in such cases is fixation. This should be both absolute and prolonged. In early infections—that is to say, in cases in which the infection is not so established as to have disorganized the joint—the details of the operative treatment endorsed by Monsarrat are as follows: (*a*) excision of the wound, or wounds, including the capsular and synovial membrane wounds; (*b*) evacuation of effusion; (*c*) removal of foreign bodies and of detached bone fragments; (*d*) transverse incision into the joint a fingerbreadth above the patella 4 inches in length; (*e*) either (and usually) no sutures or catgut suture of the excised wounds passing through synovial membrane only. No drainage material passed into the joint; (*f*) fixation on splint, with fixed extension and elevation of the limb to an angle of 45 degrees at the hip joint. It is usually necessary to maintain the patency of the transverse incision into the joint by passing a pair of dressing forceps at the daily dressing for three or four days. The results shown in the cases of which details are given here appear to demonstrate the value of this method of operative treatment in cases in which infection is not advanced. When the joint wound is complicated by fracture the question of a primary resection of the joint may be entertained if the stability of the joint is otherwise doubtful. When cases submitted to arthrotomy continue to exhibit signs of active infection on the days following operation a secondary amputation should be done; no lesser procedure is likely to be successful. Delay in amputating in such cases beyond the third day after arthrotomy is likely to be dangerous.

Amputation is advisable if infection of the joint is complicated by a serious bone injury. Amputation is further indicated if the joint wound is complicated by injury to the femoral or popliteal artery or by section of internal or external popliteal nerves. In the treatment of patients transferred from other units and admitted in the subacute stage, in which the joint is more or less infiltrated with septic granulation tissue and there are various operation wounds more or less providing drainage in Monsarrat's opinion the choice of procedure lies between: (*a*) leaving them alone carefully splinted and only operating if some secondary collection in the thigh or leg presents itself; (*b*) amputation. This shou'd be chosen when signs of general infection and septic intoxication persist; when secondary collections or tracks are present in the popliteal space; when it is obvious from the extent of the bone destruction that a weight-carrying limb cannot be anticipated. A large proportion of the cases with posterior collections and tracks end in secondary hemorrhage. Bone loss, which will leave crippling, deformity and joint disorganization, which has resulted in falling back of the tibia from the femoral condyles, will always lead to a decision to amputate.

Dublin Journal of Medical Science

March, 1918, **145**, No. 555

8 Sporotrichosis; Report of Case. W. Beatty.—p. 129.
9 Use of Dakin's Solution in Treatment of Empyema. R. A. Stoney. —p. 135.
10 Acute Troubles of Bones. J. S. McArdle.—p. 146.
11 Epistaxis in Pregnancy. Albuminuria of Pregnancy. B. Solomons. —p. 150.
12 Why Are Cerebral Motor and Sensory Cortical Areas Arranged in Inverted Order? A. F. Dixon.—p. 154.
13 General Law and Individualism. E. Wooton.—p. 160. To be continued.

Lancet, London

Jan. 26, 1918, **1**, No. 4926

14 *War Psychoneurosis. F. W. Mott.—p. 127.
15 *Study of Emigration and of Bactericidal Effects Exerted in Wound by Leukocytes. A. E. Wright.—p. 129.
16 Method of Splinting Gunshot Fractures. W. H. Johnston and J. S. Buchanan.—p. 133.
17 Cause and Prevention of Myopia. F. W. Edridge-Green.—p. 137.
18 Portuguese Surgery During First Three Months on Western Front. J. Monjardino.—p. 138.
19 Stovain Combined with Twilight Sleep in Gynecology. F. L. Provis.—p. 152.

14. **War Psychoneurosis.**—While admitting that from commotion or prolonged stress of war, a stable nervous organization may develop an acquired emotivity, Mott says, that it seems that the psychogenic or autosuggestive factor, acting on a prewar emotive brain is the chief determining cause of war psychoneurosis, and the neurotic patient's protest of anxiety lest he be boarded out of the service, or not allowed to go to the front, is really in many cases an indication of an exhausting conflict which has been going on continually in his mind between the self-conservative instinct and the moral obligation of duty and patriotism, which has its roots in the social herd instinct.

15. **Effects of Leukocytes on Wounds.**—Attention is drawn by Wright to an all important principle. When the surgeon seeks information from the bacteriologist as to whether the wound is making progress in sterilization, and whether secondary suture may or may not be undertaken, the bacteriologist is wont to take the pus and plant it out in such a manner as to secure the survival of the microbes and the destruction of the leukocytes. In other words, the bacteriologist is wont to

make what Wright calls a "necropyoculture." And then the surgeon, when he undertakes the secondary suture, very often obtains a result much more favorable than the findings of the bacteriologist would appear to warrant. If he wants to be a help to the surgeon, the bacteriologist should change his procedure. Instead of making films and neuropyocultures, and reporting the number of microbes seen or rescued alive from the pus, he should make biopyocultures, that is, provide in his cultures conditions favorable to phagocytosis, and should then report whether the leukocytes on the wound surface—assuming that the surgeon gives them a fair chance by effacing dead spaces and surface desiccation—are competent to get the better of the remaining bacterial infection.

Quarterly Journal of Medicine, Oxford

January, 1918, **11**, No. 42

20 *Study of Series of Cases of Injury to Chest, Seen at Base. C. Dean.—p. 59.
21 *Sulphemoglobinemia. W. C. Long and E. I. Spriggs.—p. 102.
22 *Clinical and Pathologic Notes on Trench Nephritis. W. H. Tytler and J. A. Ryle.—p. 112.
23 *Six Cases of Paroxysmal Tachycardia. W. E. Hume.—p. 131.
24 Abscess of Brain. W. B. Warrington.—p. 141.

20. **Injury to Chest.**—The following are some of the main points brought out by Dean's experience with these cases: If a hemothorax has been produced by a bullet wound it is very improbable that sepsis will occur. Of those produced by shell wounds about half are infected. Many patients with penetrating wounds, both bullet and shell, when seen at the end of a week, show no signs of lung injury. Pain and, more important, tenderness and hyperesthesia of the skin in a case of hemothorax should make one strongly suspect that there is infection. Cyanosis and dyspnea generally mean that there is infection of a hemothorax unless the latter is a very large one, but of all the early symptoms of infection, sleeplessness is perhaps the most valuable. The loss of weight occasioned by a septic hemothorax is a striking feature and in excess of and more rapid than that produced by sepsis in other situations. Lobar pneumonia complicating a hemothorax is not as serious as might have been expected. Contrary to expectation, abscess of the lung is a rarity. Bronchial breathing is often heard over a hemothorax. The most valuable signs for the differential diagnosis between a hemothorax and pneumonia are the degree of impairment of the percussion note and the presence or absence of râles. The roentgen rays are essential for the diagnosis and treatment of hemothorax.

After shock has subsided, pallor is not seen in patients suffering from even a large hemothorax, if it is sterile. A hemothorax, if of moderate size, should be aspirated after six or seven days, and no harm will result if this is done as a routine for every hemothorax. Clotting to a degree sufficient to prevent efficient aspiration of a hemothorax is rare. Secondary hemorrhages after the first few days do not occur in sterile cases. The position of the diaphragm is often abnormally high in cases of hemothorax, and this fact is to be remembered when aspiration or resection is performed. It is rare for organisms to be found by culture in a hemothorax fluid if they cannot be seen in a stained film prepared from the fluid. Resection is not indicated for every case of infected hemothorax. The bacteriology, general condition of the patient and the size of the hemothorax must all be taken into account in coming to a conclusion as to whether resection or aspiration should be done. The advantages of preliminary aspiration when it is certain that resection will be necessary are overbalanced by the loss of valuable time entailed by this procedure. When a hemothorax is infected solely by pneumococci, a better result will probly be obtained by aspiration than by resection.

The Carrel-Dakin method applied to the treatment of septic hemothorax after resection will prove to be of the very highest importance and value, since by its means secondary infection, which is one of the chief dangers of this class of case, can be almost completely eliminated. For resection a light chloroform anesthesia is generally safer than, and preferable to, a local one. Cases in which there is a gaping wound into the pleural cavity carry a very bad prognosis. The virulence of the infection rather than the time before drainage is established determines the density of the walls of the empyema cavity and the amount of collapse of the lung in cases of septic hemothorax. It is of great importance to get patients for whom resection has been done out of bed for a few hours at the earliest possible date, when the general condition and the pulse rate allows. The displacement of the mediastinum may take considerable time to right itself, even after operation, so that care must be taken not to mistake the abnormal position of the apex beat as evidence of a dilated heart. Bronchial breathing, râles, and an impaired resonance at the left base may be the only signs of even a large pericardial effusion. The rarity of subdiaphragmatic abscess is somewhat surprising. By far the commonest cause of death in cases of chest wound which reach the base is sepsis occurring in a hemothorax. A lower mortality in infected cases is to be gained by earlier diagnosis and more efficient treatment of sepsis, rather than by early prophylactic operations undertaken as a routine.

21. **Sulphemoglobinemia.**—A case of sulphemoglobinemia is described by Long and Spriggs showing the usual features of cyanosis—constipation, debility, and headaches. The band of sulphemoglobin was demonstrated in the blood and could be seen through the lobe of the ear. The patient complained of much abdominal pain, for which two operations had been performed without any sufficient cause for the pain having been found. There was a large element of neurosis. Improvement followed a diet consisting mainly of carbohydrate foods, the use of purges and antiseptic medicines, and the removal of carious teeth; but the patient is still the subject of the complaint. Attempts to confirm the findings, described in some other cases, of a nitrite producing bacillus in the saliva and of a substance in the blood serum which strongly reduces oxyhemoglobin solutions were unsuccessful in this patient.

22. See The Journal, April 6, 1918, p. 998.

23. **Cases of Paroxysmal Tachycardia.**—Six cases of paroxysmal tachycardia in soldiers in France are described by Hume. Three of the patients had suffered from attacks of paroxysmal tachycardia before enlistment. In no case was there any evidence of valvular disease of the heart, nor could any infection be traced as the cause of any pathologic change in the heart except in one case; in this case diphtheria had undoubtedly caused a pathologic change in the heart muscle which brought about the liability to attacks of paroxysmal tachycardia. In four of the cases attacks could be readily induced by comparatively slight exertion, and it is noteworthy how little general embarrassment the attacks caused. In view of the fact that there was no gross valvular or muscular disease of the heart, it appeared possible to Hume that the attacks might easily be induced by stimulation or depression of the controlling nerves of the heart. Prompted by this consideration, the inhibitory action of the vagus was removed by the injection of atropin sulphate and the sympathetic nerve was stimulated by the injection of epinephrin chlorid. In no case did these methods of altering the nervous control of the heart bring about a paroxysmal attack. On each occasion the response was such as is known to occur normally. Nor did alterations in pressure or in the volume of the peripheral circulatory system produce attacks: thus the response to inhalations of amyl nitrite was perfectly normal.

Endeavors were made to increase the venous filling of the right side of the heart by pressure on the abdomen and alterations in posture. On one occasion in one case a momentary stoppage of the paroxysm seemed to be caused by firm pressure on the abdomen. Two of the patients had discovered that flexion of the thighs on the abdomen with the head downward, together with a squeezing of the abdomen by the thighs, would on occasions bring a proxysm to an end. Inhalations of oxygen and carbon dioxid merely caused slight alterations in pulse rate. The six venous pulses have very similar characteristics; in each there are either one or two waves which fall within the period of ventricular systole, and in none can a separate A wave, evidence of auricular contraction, be detected. A consideration of the venous pulses and the electrocardiographic records suggests that these were cases of tachycardia of ventricular origin. This theory is

supported by the appearance of frequent extrasystole in one case during the nonparoxysmal periods.

Bulletin de l'Académie de Médecine, Paris

March 5, 1918, **79**, No. 9

25 *Coxa Vara and Obesity. E. Kirmisson.—p. 183.
26 *Lost Tendon Reflexes with Skull Wounds. Souques.—p. 194.
27 *Buried Drainage for Elephantiasis. C. Walther.—p. 195.
28 *Chemical Tests of Drinking Water. L. C. Maillard.—p. 198.
29 *Work of Army Medical Department. Sieur.—p. 201.

25. **Coxa Vara and Obesity.**—Kirmisson has been impressed by the frequent development of coxa vara in adolescents along with a general tendency to obesity. This occurs too often for it to be merely a coincidence, especially as a familial tendency is also evident. In one family described, three children have had coxa vara since the period of puberty and the mother also had coxa vara as a girl, and all four show pronounced obesity. In another family one girl of 11 had double coxa vara develop and the tendency to obesity is marked. The parents and the five other children are healthy but two are inclined to obesity. Several members of a third family show obesity and in one girl of 12 the upper epiphysis of the femur became separated, which he regards as practically the equivalent for the coxa vara in the other cases. Abortive coxalgia is another tendency in the same line. The obesity seems to be the connecting link between them all, and certain features of it, particularly the puffiness of the face, recall myxedema and suggest a possible thyroid origin. Radioscopy in two of his cases failed to show anything abnormal in the pituitary region.

26. **Loss of Tendon Reflexes After Wounds of the Skull.**—Souques warns that the traumatic meningitis after a war wound of the skull is liable to abolish the tendon reflexes permanently. This must not be mistaken for tabes, etc., later.

27. **Buried Drainage for Elephantiasis.**—Walther reports the outcome in cases of elephantiasis of the leg in which he diverted the edema fluid in the legs into the abdominal cavity by means of a rubber tube tunneling under the skin. A No. 10 or No. 12 nonperforated rubber tube is passed through the deep layer of the fascia superficialis from the incision in the anterior internal aspect of the thigh to the abdominal incision, the ends of the tube fastened with one stitch to one lip of the incision in the aponeurosis. One opening in the side of the upper end of the tube is made to insure the evacuation of the superficial lymphatics. The success surpassed all anticipations in the three cases reported here. In two the elephantiasis of one leg was of four years' standing; in one the cure is complete to date, twenty months since the operation. In the other case the elephantiasis has subsided but the skin has not yet regained its normal aspect.

28. **Chemical Tests of Drinking Water.**—Maillard regards the determination of the chlorids in the water as a reliable test of its purity. When this test was negative, the bacteriologic tests were always negative also, and vice versa. When the chemical test demonstrated that the water was good, the bacteriologic findings never showed that it was frankly bad. He always found the sodium chlorid content between 8 and 17 mg. in the pure waters while 15, 20 or 35 mg. betrayed manifest pollution. It is indispensable to know the average chlorid content of the pure waters in the region. This can be determined in a few hours by analysis of a certain number of the sources of the water. This establishes the normal chlorid content of the basin, so that any variation from this attracts attention at once. In one valley into which the troops came, he rapidly determined that the standard for the pure water in the valley was 15 mg. sodium chlorid; 0.5 mg. oxygen consumed by organic matters; the hydrotimetric degree, 31. Of the eleven springs in the valley, nine showed this standard; one showed 20 mg. sodium chlorid, suggesting contamination, and one showed 12 mg. with hydrotimetric degree of 27, suggesting flushing with inadequately filtered rain water. These springs were not allowed to be used, and the bacteriologic findings showed at least 1,000 colon bacilli in each of these two springs while in the others they ranged from zero to 20, and only in three reached 100.

29. See Paris Letter, p. 1180.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 11, 1918, **42**, No. 1

30 Hematemesis with Liver Syphilis. P. Carnot.—p. 7.
31 Alum to Supplement Quinin in Malaria. H. Dufour.—p. 13.
32 Proteins in the Spinal Fluid with Syphilis of the Nervous System. L. Babonneix and Javillier.—p. 15.
33 Autochthonous Malaria. F. Trémolières and G. Faroy.—p. 22.
34 Dyspepsia with the Sympathetic Syndrome. F. Ramond, A. Carrié and A. Petit.—p. 27.
35 *Laboratory Diagnosis of Spirochete Jaundice. P. Pagniez, A. Cayrel, P. P. Lévy and J. de Léobardy.—p. 31.
36 *Gastric Hemorrhage after Vaccination. P. L. Marie.—p. 36.
37 Pneumococcus Meningitis after Contusion of the Skull. W. Oettinger.—p. 39.
38 *Autogenous Vaccine in Enterococcus Sepsis. L. Langeron.—p. 43.
39 Severe Nephritis; Consecutive Nephralgia Cured by Decapsulation. H. Dufour.—p. 47.

35. **Laboratory Diagnosis of Spirochete Jaundice.**—Pagniez and his co-workers found in 102 men with infective jaundice that the spirochetes were present in the urine in largest numbers between the fifteenth and the twentieth day, although in the severer cases the urine contained spirochetes during the jaundice phase. They persist long in the urine; some few were found as late as the thirty-fifth and forty-fourth days. The spirochetes are very fragile and disappear from the urine as it ferments. By adding to the urine in the vessel in which it is collected 5 per cent. of a 40 per cent. solution of formaldehyd the urine is prevented from fermenting while the spirochetes are fixed at the same time. By this means the spirochetes are kept intact and show up in urine from eight to twenty-two days old. Centrifugation can be dispensed with by using the ligroin method to collect the spirochetes in the upper part of a test tube. For this, 3 or 5 c.c. of alcohol (95 per cent.) are added to 40 or 50 c.c. of urine (with 5 per cent. formaldehyd as above) in a large test tube (22 by 22). When well mixed, ligroin is poured in to a height of 2 or 3 mm. Plug with a cork and agitate violently for a minute; then set aside, propped upright, for half an hour or more. With a pipet on a rubber tube, take up the supernatant fluid and deposit three drops on a slide. Mix with them 2 drops of alcohol and spread out in a very thin layer; dry in the incubator and treat as usual. The preferable staining technic seems to be with silver preceded with tannin, followed by thorough rinsing, with care not to allow boiling on the slide—the usual Fontana and Tribondeau technic. They never found the spirochete in the blood by direct examination, but in three of seven cases this revealed it in the cerebrospinal fluid. In the sputum of eight patients with the typical jaundice they found swarms of spirochetes, but do not venture to say whether they were the specific spirochetes as no tests of them were made on animals. Besides the spirochete that seemed to be the specific one, Vincent's spirillum was numerous.

36. **Hematemesis After Vaccination Against Typhoid.**—The man of 30 had had vague and transient stomach disturbances at times, and after a severe reaction to injection of a mixed vaccine, he had three successive hemorrhages from the stomach and melena for several days but no pain in the stomach. The case warns that known lesions in the stomach should impose extra caution in the use of antityphoid vaccination.

38. **Serotherapy in Enterococcus Sepsis.**—Langeron reports a case of enterococcus sepsis in a man of 30 in which prompt improvement followed injection of a warmed autogenous vaccine a week after the first symptoms. A fixation abscess first started up to secrete after the injection of the vaccine.

Journal de Médecine de Bordeaux

February, 1918, **89**, No. 2

40 Tuberculosis in the Army. Meslier.—p. 31.
41 *Surgery of Peripheral Nerves. A. Hesnard.—p. 33.
42 *Injury of Eyes in the Gassed. M. Teulières.—p. 37.
43 *Bacteriology of Wounds under Hot Air. C. B. Lafaye.—p. 39.
44 Rupture of Both Kidney and Spleen. H. L. Rocher.—p. 41.

41. **Surgery of Peripheral Nerves After War Wounds.**—Hesnard warns that the patient's statements as to the site of the sensations of paresthesias can seldom be relied on to

locate a lesion of a peripheral nerve. Pinching the trunk nerve is more instructive, but the findings cannot be accepted as indicating repair unless known to have been previously negative. He warns further that there should not be the least delay before operating when symptoms indicate compression of the nerve. When causalgia was improved by heat, it has proved to be of reflex origin in his cases. The effect of heat also serves to differentiate certain reflex disturbances from those due to obliteration of an artery.

42. **Eye Lesions in the Gassed.**—Teulières gives an illustrated description of a typical case of severe injury from the gas recently used by the Germans (*sulfure d'éthyle bichloré*). Among 1,500 gassed men in one advanced service, in only twenty-three were the eye lesions severe, including three cases of ulceration of the cornea and one panophthalmia. Some of Teulières' cases have proved very tenacious; one man is still under treatment since last September. The conjunctivitis, photophobia and lacrimation are still intense, and the conjunctiva looks like porcelain, but the corneal lesions are healing and the leukomas are marginal, so that vision is not much impaired.

43. **Hot Air Treatment of Wounds.**—Lafaye receives in his service for hot air treatment torpid wounds which refuse to heal under other measures. The bacteria in the wounds do not seem to be modified by the jet of superheated air that is played on the wounds, but he emphasizes that no anaerobes were found in the wounds examined. The combination found most resistant was the staphylococcus plus the enterococcus. The staphylococcus was found in thirty-eight of the forty most torpid wounds, which suggests that antistaphylococcus serum might be useful for local application in these wounds with tendency to atony.

Paris Médical

Feb. 23, 1918, **8**, No. 8

45 *Primary Suture of War Wounds. G. Gross.—p. 145.
46 *Serotherapy and Lymphotherapy. Dezwarte.—p. 148.
47 Lip Reading. Lagarde.—p. 151.
48 Bacteriologic Control of War Wounds. G. Rosenthal.—p. 153.
49 Treatment of Cardiac Insufficiency. M. Leconte.—p. 155.

45. **Primary Suture of War Wounds.**—Gross describes the technic in minutest detail. He declares that the primary suture of war wounds was placed on a safe basis for the first time by Tissier's announcement that the only contraindication to primary suture is the presence of the streptococcus in the wound. Every war wound free from the streptococcus should be sutured. Cultivation of the germs is the only safe guide. Fulminating putrid infection is always the work of anaerobes plus the streptococcus. It proliferates rapidly only in fluid mediums. At 37 C. its cultures are characteristic in five or six hours. The swabs should be taken from all parts of the wound, between the fourteenth and eighteenth hours, and ordinary bouillon slants of gelose with lactose litmus, and Veillon gelose should be inoculated. Streptococci have been found in only 10 or 15 per cent. of war wounds, and associated with anaerobics only in 6 or 8 per cent. The general mortality at the advanced post No. 12 has dropped from 14 to 10 per cent. since the wounds have been systematically sutured when the streptococcus is not present and the loss of substance is not too great. The suffering is very much less after the suture, and the danger of secondary infections is warded off. By the time the unsutured wounds reach the hospitals in the home zone, fully 80 per cent. contain streptococci. Besides the advantages for the wounded, the primary suture saves time and effort for the hospital force, and is a great economy in the matter of dressings, while the service gains by the men being ready to leave the hospital by the twentieth day. The fractures leave the ambulance with the wound closed and often the fracture is consolidated. The men have to be kept until healing is complete, usually for fifteen days.

He describes the excision of the wounds *en bloc* or *en cône* or exposing the entire path of a seton wound. All blind exploration is repudiated; everything should be open. With lesions of bones, it is only necessary to remove the free sequesters; all operations on the bones should be very economical. No antiseptic should be used except possibly ether and iodoformed ether for bone lesions. Perfect hemostasis and good coaptation of the tissues are indispensable. It is sometimes advantageous to make a deep suture with wire, using three or four stout bronze wires. The skin is sutured with horsehair; a large roll of gauze is applied above, and the ends of the wires are tied over the roll. By this means hemostasis is insured and no dead space is left. The roll is left until the horsehair is removed, if not soiled with oozing. The sutures are not removed until the tenth or twelfth day, war wounds taking longer to heal than the wounds of peace.

46. **Serotherapy and Lymphotherapy.**—For nine years Dezwarte has been studying whether lymph is not better than serum for what we call serotherapy. He argues that the organism presents a defensive reaction on the part of the lymph glands to each and every disease that happens along, almost without exception. From tonsillitis to tuberculosis and cancer, the lymph glands react first and foremost, and it seems only logical to take advantage of the cellular elements involved in the defensive reaction in the lymph glands. Serotherapy should be supplanted by lymphotherapy. A beginning has been made in this line with autoserotherapy and Wright's vaccines. He suggests that repeated lymphatic reactions might prove useful in sensitizing living bacilli, passing them through series of animals and using the animals' lymph for the vaccine. Or the bacilli could be sensitized by mixing with lymph in the test tube. Besredka's technic sensitizes living bacilli with antibodies. Utilizing, instead of this, the lymphatic reaction would be much more like the natural methods of defense on the part of the organism.

Presse Médicale, Paris

Feb. 18, 1918, **26**, No. 10

50 *Fracture of Joints. R. Leriche.—p. 85.
51 Mechanism of Muscle Tonus. H. Piéron.—p. 88.
52 *Orthostatic Tachycardia. G. Leven.—p. 91.

Feb. 21, 1918, **26**, No. 11

53 *War Wounds of Laryngotracheal Region. Guisez.—p. 97.
54 Heliotherapy, Phototherapy and Fresh Air in Tuberculosis and for War Wounds. R. Brunon.—p. 100.

50. **Resection for Fracture of Joint.**—Leriche refers to primary subcapsular periosteal resection when the joint has been entered by a fragment of shell. In a hospital, 12 kilometers back of the front line, resection was done in 48 per cent. of ninety cases of severe war wounds of the knee; arthrotomy in 54 per cent., and in 5 per cent. the limb had to be amputated. The resection was a success in all but one case, and he advocates it as a routine measure which would much reduce the number of amputations otherwise necessary and the number of cases of fatal shock. This view is contrary to the conclusions adopted at the last meeting of the Interallies Surgical Conference which affirmed that primary resection now is only exceptionally indicated, and that, in any event, primary resection for the purpose of obtaining a better functional outcome, should be abandoned. Leriche presents an array of arguments to combat both these assumptions.

52. **Orthostatic Tachycardia.**—Leven insists that a number of orthostatic phenomena which have been ascribed to toxic action are in reality merely reflex manifestations. Those connected with dilatation of the stomach, especially orthostatic tachycardia, can often be cured at one stroke by lifting up the stomach. He reports a typical instance of the instantaneous relief of tachycardia by gastropexy in a soldier of 27. Standing, his pulse had been 120; reclining, or standing with the stomach pushed up into place, the pulse was 60. His attacks of pain in the region of the solar plexus, pallor, temperature of 40 C. and weak pulse of 60 formed the syndrome common with extreme sagging of the dilated stomach. After reducing the size of the stomach by taking folds in the posterior aspect with ten silk sutures, and fastening the stomach to the abdominal wall, the pulse gradually returned to approximately normal figures. Orthostatic tachycardia

should suggest dilatation and ptosis of the stomach, as also orthostatic reduction in the blood pressure, orthostatic pallor and lassitude, orthostatic hyperesthesia of the solar plexus, orthostatic albuminuria and orthostatic dilation of the pupils.

53. **War Wounds of Laryngotracheal Region.**—Guisez reviews the long difficult treatment required daily for months with wounds involving the larynx or trachea. A number of typical cases are described with the measures applied. Laryngotracheostomy has given the best results. He makes a point of refraining from tamponing the laryngostomy wound until the fifth day. This obviates the necrosis of the cartilage liable with early tamponing.

Revue Médicale de la Suisse Romande, Geneva

February, 1918, **38**, No. 2

55 *Obliteration of Superior Vena Cava. R. Favre.—p. 97.
56 *Amebic Dysentery. P. Calame.—p. 125.

55. **Obliteration of Superior Vena Cava.**—Favre describes the clinical picture as observed in four cases of obliteration of the superior vena cava and compared with five on record. His patients were two men of 40 and 55 and two unmarried women of 50 and 56. One of the women had long been insane. All four presented an identical set of symptoms. One case, he thinks, is the first that has been published in which the occlusion of the superior vena cava was secondary to a syphilitic osteitis of the sternum, with ulceration in the esophagus. In the other cases syphilitic phlebitis was manifest. The symptoms are those inevitable from the disturbance in the circulation, the venous stasis in the upper part of the body. The prognosis depends on development of collaterals. Treatment should be begun at the first signs of syphilitic mediastinitis with symptoms on the part of the superior vena cava. The physical and roentgen examination and history of the case, with the serologic findings, confirm the diagnosis when a patient presents cyanosis of face and hands and an elaborate subcutaneous network of veins.

56. **Amebic Dysentery.**—Great improvement was realized under rectal injections of emetin and silver nitrate. With incipient amebic dysentery, emetin attacks and routs out the amebas, but after they have been long in the tissues and are ensconced in the chronic ulcerations, emetin injected subcutaneously cannot reach the amebas. When this stage is reached, local measures are preferable, and he found neosalvarsan in rectal injections extremely effectual in a rebellious chronic case. The blood disappeared from the stools after the first injection and by the third the dysentery seemed to be conquered. The stools have been constantly normal since after years of discomfort and weakness from the amebic dysentery. The man had been brought on a cot to the hospital with twenty-five dysenteric stools a day, and hemoglobin percentage under 28. The disease was of about three years' standing. It is possible that the neosalvarsan or its equivalent might prove still more effectual if the bowel were flushed through an appendicostomy.

Correspondenz-Blatt für Schweizer Aerzte, Basel

March 2, 1918, **48**, No. 9

57 *Results of Goiter Operations. Lommel.—p. 273.
58 Diphtheria at Basel. R. Massini.—p. 279.
59 Salvarsan in Amebic Dysentery. F. Heim.—p. 282.
60 Success of Laparotomy plus Tincture of Iodin for Tuberculous Peritonitis. S. Stocker, Jr.—p. 293.

57. **Goiter Operations by de Quervain's Technic.**—Lommel relates that this technic has been applied constantly at the Bern hospital since early in 1914 and with constantly increasing satisfaction. Time has proved that no untoward by-effects have followed in any instance. In more than 50 per cent. of the 190 cases the operation was bilateral, and yet early paralysis of the recurrent nerve occurred in only 0.5 per cent., and in this case proved transient. In three other cases, recurrent paralysis developed several weeks after the operation and proved permanent. On the whole, this de Quervain method of preventive extrafascial ligation of the arteries is styled an essential progress in the technic of strumectomy.

Annali d'Igiene, Rome

Feb. 28, 1918, **28**, No. 2

61 *Tuberculosis and Blastomycosis. F. Sanfelice.—p. 41.
62 *Glanders in Felines. M. Carpano.—p. 68.
63 *Color Test of Flour. E. Calendoli.—p. 76.

61. **Tuberculosis and Blastomycosis.**—Sanfelice states that the lungs of tuberculous cattle constantly contain blastomycetes and other fungi. Among the blastomycetes are some species pathogenic for laboratory animals and fowls, and in shape and cultures not distinguishable from the *Saccharomyces neoformans*. Associated with tubercle bacilli, animals inoculated died more rapidly than the controls inoculated with the tubercle bacilli alone, and the tissues show both diffuse tuberculosis and blastomycosis.

62. **Glanders in Felines.**—Carpano found signs of acute glanders in the lungs of a tiger dying in captivity at Rome, and others have reported similar findings in lions and cats. The zoological gardens at Rome recently had an epizootic of acute glanders among the lions and tigers but the other animals escaped. Twelve of the large felines were affected and a number died. Cats inoculated from them developed the same set of symptoms in from three to five days, while other cats infected naturally from these cats showed an incubation period of six or seven days. The temperature, however, ran up the end of the fourth day.

63. **Color Test of Flour.**—Calendoli adds a pinch of wheat flour to a little concentrated hydrochloric acid. The color of the fluid changes to violet in proportion to the freedom from bran particles and of flour from other grains. The change of tint is complete in one or two hours and persists unmodified for twenty-four hours. Other flours and bran change the tint to brown.

Gazzetta degli Ospedali e delle Cliniche, Milan

Jan. 13, 1918, **39**, No. 4

64 *Hemorrhagic Purpura after Quinin. N. Samaja.—p. 35.

Jan. 20, 1918, **39**, No. 6

65 The Organ of Hearing in Aviators. Tanturri.—p. 55.

Jan. 27, 1918, **39**, No. 8

66 Shrapnel Ball in Right Heart. G. Pisano.—p. 75.

64. **Purpura from Quinin.**—Samaja says that malaria is the one disease encountered most frequently now in the Italian military hospitals. Among 417 patients in his service at Bologna, 244 had malaria. Among the symptoms of intolerance of quinin, occasionally noted, hemorrhagic purpura was not exceptional, but the dose of quinin usually was large when this by-effect was observed. In one case, however, the severe purpura developed after doses of only 1 mg. per kg. of body weight. The attacks of hemorrhagic purpura followed whether the quinin was given by the mouth or subcutaneously, and in constantly smaller doses down to 0.10 gm. but the intensity of the purpura was less pronounced with the smaller doses.

Riforma Medica, Naples

Feb. 9, 1918, **34**, No. 6

67 *Paralysis from Shell Air Shock. L. Gatti.—p. 102.
68 *Precipitation Reaction in Syphilis. G. Bastogi and L. Corridi.—p. 107.

Feb. 16, 1918, **34**, No. 7

69 *Functional Disability after War Wounds. R. Falcone.—p. 122.
70 *Infectious Jaundice. E. Salvaneschi.—p. 126.
71 The Trigeminal Syndrome. E. Aievoli.—p. 128.

67. **Paralysis from Air Concussion.**—Gatti reports a case of extremely acute paralysis with atrophy following close on explosion of a large bomb without actual contact. The tetraplegia was of the type of anterior poliomyelitis, and Gatti assumes that the anterior portion of the spinal cord had been injured by the air contusion. He knows of only one similar case on record. The paralysis and the atrophy gradually invaded all the musculature except in the head and neck, but there were no sensory disturbances and the sphincters behaved normally. Instances of traumatic anterior poliomyelitis are on record. Some injury of the blood vessels in the bulbar region is evidently responsible for the whole set of symptoms.

68. **Bruck's Precipitation Test for Syphilis.**—Bastogi and Corridi applied Bruck's nitric acid test to serum from 113 syphilitics or suspects and to fifty-five nonsyphilitic patients or healthy persons. Positive findings were obtained nearly as often in the nonsyphilitic as in the syphilitic, while a negative response was common with known syphilis. This unfavorable verdict corroborates Stillians' (The Journal, Dec. 15, 1917, p. 2014).

69. **Functional Disability After War Wounds.**—Falcone discusses in turn the proper treatment when the war wound leaves vicious consolidation, ankylosis, pseudarthrosis, paralysis, retraction of muscles or tendons or chronic edema. He insists that all these are avoidable, and that, once established, physical measures are destined to fail to cure unless they are applied or reenforced with zeal and energy by the patient himself. But this cooperation on the part of the patient cannot be secured with the wounded soldiers; they are apathetic if not directly hostile to measures to cure them up quickly. Hence Falcone urges that physical measures should be applied from the first, while the man is still in the hospital and under medical control. It does no harm to flex the fingers or massage the soft parts or apply electricity, even if the bone below is not entirely healed. The crippling deformities can often be traced to lack of care during the healing—physical measures cannot be ordered like so much quinin, but must be adapted to the individual case and constantly supervised, and be applied during the tractable phase before the parts grow stiff and rebellious. He advocates legal authority for correction of deformity by some insignificant operation, such as tenotomy to cure talipes equinus. The men now refuse to permit such interventions as they prefer the crippling to a return to the front line. He suggests that surgical centers might be equipped each for some special intervention in this line by specialist surgeons, to which the men could be referred before their deformity becomes irreparable and throws them a burden on society for life.

70. **Infectious Jaundice.**—Salvaneschi analyzes the clinical findings in 276 cases of spirochete jaundice in the troops of the advanced line. The gallbladder was always enlarged and tender and the liver was usually much enlarged from the very first. The spirochetes seem to be found constantly in the urine, and hence the close quarters in the trenches favor transmission of the infection in food and water. The spirochetes may also find their way into the body through erosions.

Rivista di Clinica Pediatrica, Florence

February, 1918, **16**, No. 2

72 *Visceral Syphilis in Young Infants. G. Menabuoni.—p. 57. Commenced in No. 1, p. 1.

72. **Visceral Syphilis in Infants.**—Menabuoni reports the clinical history of twenty-two cases of inherited syphilis localizing in the viscera in children less than a year old, with the necropsy findings in a number. The spleen and liver were enlarged in all. In seven of the eight whose blood was examined, the leukocytes ranged from 1,400 to 24,000. He compares the findings in the various organs with those on record. All show that the lesions vary according to the period of fetal existence when they began, but they are all of two types, either a hyperplasia of the tissues of mesodermic origin, starting from the vessels and entailing sclerosis and atrophy, or a reaction and changes in the noble elements of the organ arrested in its development, entailing cystic formations and foci of necrosis. The vessels are always damaged, the spirochetes injuring them first and spreading from them to the surrounding tissues. The infants born dead or dying soon after birth show the various steps of this spirochete septicemia.

Anales de la Facultad de Medicina, Montevideo

December, 1917, **2**, No. 11-12

73 *Alternate Traumatic Paralysis. A. de Castro.—p. 697.
74 *Diabetes Insipidus and the Pituitary. P. Lereboullet.—p. 712.
75 Study of Arterial Blood Pressure. A. Martinet.—p. 742.
76 *Relations between Dietetics and Urology. L. Lematte.—p. 757.
77 *Liver Disease with Gastric Ulcer. A. Navarro.—p. 773.
78 *The Cholesterol Index. L. A. Surraco.—p. 778.
79 *Amputation of Uterine Cervix. M. B. de Bengoa.—p. 819.
80 *Gastric Fistula. C. Nario.—p. 823.

73. **Traumatic Alternate Paralysis.**—De Castro gives an illustrated description of two cases of what he calls the Millard-Gubler syndrome, the arm, leg and face on one side being paralyzed as also the external oculomotor muscles of the eye on the other side. The bullet or spike had injured the pons and he describes the mechanism, citing further Nodet's case in which the prong of a pitchfork had entered the chin and pierced through to the skull, back of the vertex. Notwithstanding the long path of the prong, no symptoms were observed from it except the alternate paralysis of the Millard-Gubler type, resulting merely from the injury of the pons on its way.

74. **Diabetes Insipidus and the Pituitary Body.**—Lereboullet has long proclaimed the advantages of pituitary treatment in cases of diabetes insipidus. The pituitary lesion may act directly or by compression of nerve tissue in the vicinity, or changes in the nerve tissue may secondarily affect the pituitary. He gives the ultimate outcome of a case previously published in which the man of 24 had seemed to stop developing at 14 and presented eunuchoid infantilism with permanent polyuria, falling out of the teeth, and eruptions suggesting that besides the diabetes insipidus there were certain elements of diabetes mellitus. Alimentary glycosuria followed even 50 gm. of glucose. The output of urine was from 6 to 10 liters in the twenty-four hours and pituitary treatment by the mouth did not modify it, but subcutaneous injection of 0.05 gm. pituitary extract, corresponding to half of the posterior lobe of a beef pituitary body, caused the urine to drop to 1 or 2 liters; appetite and sleep returned and the young man felt better, but this effect never lasted over twenty hours. He finally made the injections himself and kept them up for months. If they were suspended for twenty-four hours the polyuria returned. After two years of this he had gained 3 cm. in height, the hair on his body had grown somewhat, and the testicles had descended, and there were erections and ejaculations—phenomena never known before, but old tuberculous lesions in the lungs and around the anus had continued to progress, and proved fatal a year or so later. In these and similar cases of *infantilisme reversif*, the thyroid seems to be involved but to a less extent than the pituitary. Syphilis is evidently a factor in certain cases. Sourdel has reported a case in which, twenty years after syphilis had been contracted at 25, the man developed atrophy and infantilism of the genital organs plus extreme polyuria. Other cases are cited to sustain this relative frequency of diabetes insipidus with reversive infantilism, and the frequency of syphilis as the main factor in the disturbance in pituitary functioning responsible for the phenomena indicating dystrophy. Diabetes insipidus is also encountered at times with the adiposogenital syndrome, but less often than with congenital or reversive infantilism. Still more conclusive in this line is the development of polyuria in the course of cancer of the breast and occasionally elsewhere, explained by metastasis in the posterior lobe, found at necropsy. The most convincing argument, however, is the efficacy of pituitary treatment. Although the action lasts only for twenty-two hours, even this gives great relief, whether its action is specific or merely symptomatic.

76. **Mineral Metabolism.**—Lematte discusses the ratios between the intake of minerals in food and the elimination in the urine, and the action of the different segments of the digestive tract on the combinations of minerals. It seems to be settled that the reciprocal saturations of oxids and acids occur according to the laws of thermochemistry. He states that the phosphate or biphosphate content of the urine depends on the quantity of hydrochloric acid liberated by the gastric secretion. The phosphate content of the urine is thus an index of the chlorhydria of the stomach. The liberation and oxidation of sulphur occur in the intestines parallel to the liberation of the amino-acids. Other things being equal, the proportion between the sulphur of the sulphates and that of the sulphoconjugates of the urine is determined by the pancreatic and intestinal digestion.

77. **Liver Abscess with Ulcer of the Stomach.**—In Navarro's two cases the liver disorder dominated the clinical picture, and after opening an abscess in the liver or after repeated punctures releasing blackish blood without pus, the ulcer in the anterior aspect of the stomach healed spontaneously, that is, under the influence alone of the exposure to light and air during the laparotomy. In neither of the cases was the gastric ulcer suspected before the operation, and it was not found until necropsy in one case. In the other the gastric ulcer region was solidly adherent to the inflamed liver but no abscess had formed as yet.

78. **Cholesterol Index.**—For the last year, Surraco has been determining the cholesterol content of the blood in all cases of stenosis of the urethra or enlarged prostate. This cholesterolemic index reflects the state of the organic defences, and when determined in series throws light on the prognosis. A cholesterol content below 1.2 gm. indicates something wrong, showing extreme weakness of the organic defences. Above 2 gm., it indicates chronic slow infection or more or less pronounced uremia. Below 1 gm. the prognosis is very grave. Cases are described which confirm these statements. The normal range is apparently from 1.2 to 1.9 gm.

79. **Amputation of Uterine Cervix.**—De Bengoa has modified Bonney's technic for amputation of the cervix so that no raw surface is left exposed while the shape of the cervix is normal. The result was a complete success in the six cases in which he has applied this technic to date. After the amputation he runs a stout catgut suture around below the mucosa, like a garter, the ends brought out at one side. Then the two suture threads of Bonney's technic are passed through the tissues, at some distance back, enclosing the raw margin on each side. The garter suture is drawn up and tied; this restores the natural shape and size of the cervix opening. Then pulling on the two Bonney threads draws this raw edge inward for some distance, and when the Bonney threads are tied the cervix is left like the mouth of a muff, nothing showing but sound tissue.

80. **Gastric Fistulas.**—Nario advocates continuous aspirating siphonage action through the skin stomach fistula. In the two cases described, the fistula left after gastrectomy or cholecystectomy began to heal almost at once when this was done.

Brazil-Medico, Rio de Janeiro

Jan. 12, 1918, **32,** No. 2

81 *Case of Mutilating Leishmaniosis. R. Machado and A. Aleixo. —p. 9.
82 *Cancer of the Liver with Gallstones. J. Amaral.—p. 11.

Jan. 26, 1918, **32,** No. 4

83 Flagellate Helminths in Brazil. VI. O. O. R. da Fonseca.—p. 25.
84 Double Congenital Hand without Radius. (Mão radio-palmar.) A. F. de Magalhães.—p. 25.
85 *Massage of Lacrimal Sac. N. da Rocha.—p. 26.

81. **Mutilating Leishmaniosis.**—The upper lip and palate had been destroyed and the adjoining soft tissues had hypertrophied and hung down like broad tusks to below the chin. Under antimony treatment the extensive lesions healed and a plastic operation gave good results. The treatment was begun with intravenous injections of 0.01 gm. of tartar emetic in 1 c.c. of distilled water, and the lesions were laved with the same. After thirteen daily injections the dose was increased to 0.05 gm. and ten injections were given at three day intervals. The dose was gradually increased to 0.07 and 0.08 at two or four days interval, and the tolerance was apparently complete, but a violent reaction followed a single dose of 0.10 c.c. By this time healing was complete.

82. **Cancer of the Liver in Youth.**—The boy of 14 had three healthy brothers and sisters and the father is healthy; the mother died from hemorrhage at his birth. After an attack of pneumonia at 14, the boy suffered from severe gallstone colics and some ascites developed. He passed two gallstones but the pains in the liver kept up and the much enlarged liver felt hard but uniform. There was no fever at any time. The laparotomy revealed cancer of the liver and the boy died before the week was over, about forty days after the first symptoms. There was nothing to suggest syphilis in the boy or family. Cholelithiasis frequently precedes cancer of the liver; ascites does not accompany gallstones, as a rule. Fever is regarded as an important sign of cancer of the liver but it was not present in this case. The diuresis had kept up well.

85. **Massage of Lacrimal Sac.**—Da Rocha insists on teaching the patient to massage the region several times a day, always back of the crest of the bone. The massage restores elasticity to the stretched walls of the lacrimal sac, and the rubbing of the walls together clears the passage of accumulations. If catheterization is necessary, a few days of preliminary massage facilitate it and enhance the effect.

Cronica Medica, Lima

February, 1918, **35,** No. 656

86 Alkaline Treatment of Eclampsia. J. A. Maldonado.—p. 33.
87 Nephritis with Chloridemia, High Blood Pressure and Sclerosis of the Aorta, of Alcoholic Origin. E. Odriozola.—p. 39.
88 Psychanalysis. H. F. Delgado.—p. 45.

Prensa Medica Argentina, Buenos Aires

Feb. 20, 1918, **4,** No. 26

89 Gangrene in Syphilitic Pulmonary Process. M. R. Castex and J. Queirel.—p. 355.
90 Internal Ear Lesions from Neosalvarsan Cured by Neosalvarsan. M. Galdos.—p. 358.
91 Treatment of Anthrax with Normal Beef Serum. J. Penna, J. B. Cuenca and R. Kraus.—p. 363. Continuation.

Revista de Medicina y Cirugia, Havana

March 10, 1918, **23,** No. 5

92 *Typhoid in Cuba. M. G. Lebredo.—p. 119.
93 *Metastasis from Hypernephroma. D. G. Marmol.—p. 128.
94 The Simultaneous Publication of Original Articles. J. F. Arteaga. —p. 135.
95 Advertisements in the Medical Press. G. F. Arreu.—p. 137.
96 The Physician as a Civic Leader. A. Galarreta.—p. 140.

92. **Typhoid in Cuba.**—Lebredo remarks that while Cuba has conquered yellow fever, smallpox and bubonic plague, yet it keeps on paying a high tribute to typhoid. In 1917 there were many cases in different provinces throughout the island. He insists that every typhoid case should be taken to a hospital as the only means to insure adequate prophylaxis. In fact, every pyrexia of long duration or with infectious gastro-intestinal symptoms should be removed to the hospital, or the Public Health Service should take the prophylaxis in the home into its own hands.

93. **Hypernephroma.**—The man of 50 had had pains and hematuria for seven months when the right kidney was removed on the assumption of hypernephroma. The tumor weighed 420 gm. Two months later pains in the left shoulder attracted attention and a metastatic tumor was found at the head of the humerus. After disarticulation there were no further symptoms for a few months. Then metastasis in the femur compelled amputation in the upper third. There were no further symptoms during the following two years, but the man then succumbed to the effects of morphin addiction. Metastasis of this form of cancer generally locates in the lung, liver or long bones, and many cases of supposed primary sarcomas in these regions were rightfully metastasis from undiagnosed hypernephromas. Hochenegg has reported metastasis ten years after nephrectomy for the primary tumor. In the case described, the metastasis in the shoulder was evidently installed before the primary tumor had been discovered and removed. The second metastasis developed at a point where the femur had just been fractured.

Revista Medica Cubana, Havana

March, 1918, **29,** No. 3

97 *The Medical Press. Juan Santos Fernandez.—p. 117.
98 *Different Forms of Ileus. E. Yaniz.—p. 122.
99 *Practice of Medicine in Cuba. D. T. Lainé.—p. 131.
100 *Intoxication from Eating Fish. H. Seiglie.—p. 141.

97. **The Latin-American Medical Press.**—Fernandez says it is a capital defect of Latin races to shrink from writing for publication, and consequently the fruits of their experience perish with them. He warns the medical students of the day to beware of the *habito latino del mutismo.*

98. **Different Forms of Ileus.**—Yaniz reports merely some unusual forms which he has encountered, calling attention to the necessity for differentiating ileus from paralysis of the bowel. This latter requires merely medical measures. After operations on the bowel he often gives pituitary extract to promote peristalsis, and advocates it also in the medical cases, with massage of the abdominal wall.

99. **Practice of Medicine in Cuba.**—Lainé relates his impressions when he returned to Cuba twenty years ago to practice medicine after studying in the United States and practicing several years in Philadelphia. At that time the practice of medicine in Cuba was modeled on the European, and scarcely anything was known of American medical and surgical methods, but now, he says, the majority of Cuban physicians are in close touch with physicians and surgeons of the United States. They are familiar with American medical literature, and they use American drugs. In the United States, he adds, a physician called in consultation will never allow the family to transfer the patient to his care, but this has been done in Cuba. In regard to drugs, he remarks that no country in the world uses such an enormous quantity of proprietaries in proportion to size and population as Cuba. This is due either to ignorance of fundamental therapeutics or to heedless indifference. Another peculiarity of practice in Cuba is the large doses of calomel used. It is not uncommon to see doses of 0.10 or 0.20 gm. of calomel prescribed for small children. Strychnin, on the other hand, is given very cautiously; few venture to order more than 1 mg.

The climate of Cuba is decidedly enervating for persons from the North, for women especially. After one or two years' residence in Cuba the majority of persons from the United States have to return to a cooler climate to recuperate. The Cuban diet contains an unusually large proportion of meat, and fresh vegetables are very scarce—this cooperates with the climate and the lack of exercise in undermining the health. He estimates that instead of the usual 10 per cent. of proteins in a diet of 2,500 calories, the Cubans have 60 per cent. proteins, and mostly served fried. The special features of the morbidity of Cuba that have impressed him are the rarity of acute lobar pneumonia and of acute articular rheumatism, and the mildness of the children's diseases, whooping cough, measles and scarlet fever. Dengue is extremely common, and it can be diagnosed from the first by the spontaneous pain in the eyeballs and the pain on pressure. The pains increase as the eyeballs are rolled up or down. The rash is manifest the third or fourth day, especially in the face, but it may have to be sought for in a good light.

In conclusion he urges the profession to overcome the extreme conservatism of the Latin-American, to cultivate the spirit of union in the profession, and overcome the tendency to distrust each other. He relates that for years he was the only surgeon in Cuba that used gloves in operating, and it is only about three years since they have come into general use. For six years he has been giving antityphoid vaccine to his family and patients but its use has not become general in Cuba. He adds that for more than a year he has been using nitrous oxid for the anesthetic in surgery and obstetrics, but no one else is adopting it. His thirty years of the practice of medicine, he declares, have been a constant struggle to keep not too far behind the progress of medicine and surgery; in other words, his life as a medical student has never stopped a moment. Many years ago he became convinced that no one man can master all the medical sciences, and he never hesitated to call on specialist aid as needed in the individual case. "Our profession cannot get along without mutual aid. We must be honest with ourselves, and, recognizing our limitations, learn to know when to depend on others."

100. **Poisoning from Fish.**—Seiglie describes the set of symptoms known as *ciguatera*, caused by eating fish. Some fishes are naturally poisonous, others only when they reach a certain size or age. He lists them all and comments on the uncontrollable vomiting, the colics, tenesmus and dysenteric or choleriform passages, with or without nervous disturbances. Scotoma, diplopia and sometimes transient blindness and contraction or dilation of the iris are common, and ptosis of the eyelids. The pulse is small and irregular, the tension and temperature subnormal. There is almost always a rash, with desquamation, and sometimes the hair and nails drop out. Lavage of the stomach, effervescent mineral waters, scraps of ice and champagne may be indicated, with morphin if there is much agitation. The antitoxic action of the liver should be stimulated and the bowels disinfected, with salol, sodium salicylate, etc., and the emunctories stimulated with copious ingestion of water with 5 per cent. lactose, or infusions.

Semana Medica, Buenos Aires

January 10, 1918, **25,** No. 2

101 Hemogrenarina in Blood of Frogs. S. E. Parodi.—p. 37.
102 *Tuberculosis in Spaniards. E. R. Coni.—p. 40.
103 Operative Case of Bezold's Mastoiditis. L. A. Huerta.—p. 41.
104 *Chronic Arsenic Poisoning. S. M. Zayas.—p. 43.
105 Vocational Training at Buenos Aires. E. R. Coni.—p. 46.
106 Hypnotism, Idealism and Materialism. F. de Courmelles.—p. 54.

102. **Tuberculosis in Spaniards.**—Coni was impressed with the large percentage of native Spaniards in his medical service at Buenos Aires although the Italians in the general population far outnumber the Spaniards. He noted also the large percentage of young married women born in Argentina of Spanish parents. He cites some international figures which place Spain at the head of the list of tuberculosis mortality. His table shows 5,000 deaths from tuberculosis in Spain per million inhabitants; France comes next with 3,900; then Portugal, 3,800; Austria, 2,700; Germany, 2,200; Argentina, 2,000; Italy, 1,800, and England, 1,300. In Argentina the Italians generally drift to outdoor occupations while the Spaniards are employed more in hotels, restaurants and stores.

104. **Chronic Arsenic Poisoning.**—The man of 39 has presented for three months symptoms of pseudotabes from peripheral polyneuritis. Zayas ascribes the syndrome to poisoning from the arsenic with which the drinking water in the Bell Ville region is known to be impregnated, as recently mentioned in these columns. This case developed about twenty miles from Bell Ville, showing that the dangerous water affects a larger area than hitherto assumed.

Siglo Medico, Madrid

Jan. 19, 1918, **65,** No. 3345

107 *Endemic Goiter in Spain. J. Goyanes.—p. 43.
108 Case of Splenomegaly with Polycythemia. F. J. Asua.—p. 47.

Jan. 26, 1918, **65,** No. 3346

109 *To Ward Off Recurrence of Cancer. D. A. Morales.—p. 62.
110 Shape and Movements in vitro of the Blood Cells. F. Mas y Magro.—p. 64.
111 Patriotism and Heroism. J. G. Ocaña.—p. 67.

107. **Endemic Goiter in Spain.**—In the high mountain valleys in the province of Avila goiter is endemic in man but the trout caught in large numbers in the streams for the market seem to be free from it. Goyanes' studies of these endemic foci have convinced him that an infectious factor is certainly involved. Improved hygiene seems to be reducing the prevalence of goiter and cretinism in these old foci. The thyroiditis responsible for the goiter develops in phases, with intermissions.

109. **Prophylaxis of Recurrence of Cancer.**—Morales in commenting on a few cases of cancer of the penis says that recurrence is almost certain when the penis alone is amputated. On the other hand, recurrence is almost unknown when the entire external genital organs are removed. With complete castration, nothing is left to keep up dangerous stimulation or irritation which otherwise is liable from the testicles.

Russkiy Vrach, Petrograd

Oct. 28-Nov. 25, 1917, **16,** No. 43-47

112 *Mammary Tumor from Shell Air Shock. N. A. Velyaminoff.—p. 545.
113 Exhibitions of So-Called Mind Reading. V. M. Bekhtereff.—p. 549.
114 Hernia through the Diaphragm after War Wounds. I. E. Hagen-Torn.—p. 554. To be concluded.
115 Action of Alkaline Metal Salts on the Vessels of Internal and Peripheral Organs. M. I. Gramenitzky.—p. 558. Continuation.

116 Sanitary Conditions in Prisoners' Camps in Germany and Austria. D. P. Nikolsky.—p. 562. Continuation.
117 *Changes in the Blood Picture in Trench Fever. P. N. Triudin.—p. 566.
118 The Ferments in Infectious Diseases. A. S. Solovtzova.—p. 569. To be concluded.
119 Tropical Ulcer in the Troops. B. A. Volter.—p. 571. Continuation.

112. **Tumor in the Breast from Shell Air Shock.**—Velyaminoff's case was in his own person, and he relates how the first year or two of the war had passed without any special disturbance. He was accustomed to artillery fire, but then came a period when he was stationed in a small, one story building where orders were issued, the men paid, plans drawn and reports presented while all the time the place was being bombed by aeroplanes. The bombs caused such explosions that the walls shook and the plaster dropped off as if in an earthquake, and this kept up not for minutes but for hours at a time and often in the night. Some days the aeroplanes dropped as many as 120 bombs in the morning and 60 in the afternoon. As the walls of the house rocked, he found that his chest wall shook too, as he confirmed by the flame of a candle. Sometimes the explosions were so powerful that the men in the small shelter with him were knocked down by the air concussion and he was knocked off the bench on which he was sitting. He is a man of 62, and he noticed a disagreeable sensation in his left chest as these explosions occurred. The nipple grew very tender and felt as if there was an extensive burn in the region, and the left breast developed a tumor. He attributes all this to the repeated air contusions. The aspect of the mammary tumor was exactly like that of the so-called hysteric tumors, but his general condition precluded the assumption of hysteria. The left arm felt numb, or paresthesias, at the same time, and these phenomena and the size of the tumor varied in intensity from time to time and parallel, during the six weeks he was subjected to this aerial bombardment. During the whole period he felt a little depressed but this was more from responsibility and overfatigue than from a sense of personal danger. It was very annoying to have to be interrupted so constantly in one's work and be forced to seek shelter, wasting precious time. He theorizes to explain the mechanism of the disturbances, ascribing them to the shaking up of the nervous system and of the glands with an internal secretion, the result being equivalent to a "chemical trauma."

117. **Ameba Found in Trench Fever.**—Triudin is convinced that the infectious disease he describes, known as "trench fever," is a disease *sui generis*. Also that the ameba he found in the blood stands in some causal relation to it. He found the protozoon in 75 per cent. of his twenty-four cases, but exclusively during the first three days of the disease. The blood showed the characteristics of a severe blood disease. Coagulation was retarded; in some it began at the tenth minute, in others not until the twenty-third. The average was eighteen minutes.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Feb. 9, 1918, **1**, No. 6

120 *Acclimatization. C. D. de Langen and J. Schut.—p. 336.
121 Standardization of Lobelia. C. de L. Van Wijngaarden.—p. 347.
122 *Medical Cure of Anal Fistula. G. H. J. Peter.—p. 352.

120. **Practical Aspects of Acclimatization in the Tropics.**—De Langen and Schut practice in the tropical islands of the Dutch East Indies, and they call attention to their constant finding of characteristic changes in the blood of persons coming to the tropics to live. They insist that the intensity of the light, the content in chemical rays, are no greater in the tropics than in Europe, so this cannot be responsible for the modified physiologic chemistry in the tropics. They found that the average sugar content of the blood of natives of Java was 0.15 per cent. and of Europeans residing in Java, 0.16 per cent. In corresponding research on Europeans in Europe they had found 0.093 per cent. as the average of the reducing substances in the blood, with the Bang micro test, which are regarded as representing the sugar content. The content in the blood of rabbits, guinea-pigs and hens in Europe averaged respectively 0.10, 0.11, and 0.15 per cent., while in Batavia these averages were 0.16, 0.15 and 0.26 per cent. McCay has also published findings of blood sugar in the natives of Bengal 50 per cent. higher than the average in Europe. He did not investigate the sugar content in Europeans residing in Bengal, and ascribed the high findings in the natives merely to their predominantly carbohydrate diet, and not to the tropical climate. The cholesterol content of the blood, on the other hand, is abnormally low. In the natives the cholesterol content averages only half of the average in Europeans in Europe; in twenty natives the average was 0.88 gm. per liter of blood serum while the average in Europe is said to be 1.5 to 1.75. European immigrants in Batavia also show a low cholesterol content. De Langen and Schut did not investigate the calcium content of the blood, but they suggest that as this is always found abnormally low when there is hyperglycemia, we can almost take it for granted that there is a deficit in calcium. A number of facts sustain this assumption, as they relate; among them the tendency of tuberculosis in the tropics to be exclusively of the exudative type, without calcium shadows in the lungs, and calcium deposits in arteriosclerotic vessels are rarely found in cadavers.

The primal cause for these differences between the blood condition in Europe and in the tropics, they ascribe to the heat. The humidity may also be a factor. The hypothesis is advanced that the heat exaggerates the tonus of the sympathetic nervous system. If we can accept this, all the phenomena are explained as the logical and inevitable sequence of high sympathicotony, acting on the suprarenals, etc. The writers' research on animals, artificially stimulating the sympathetic nervous system, reproduced the whole sequence: the glycogen in the liver was mobilized, the sugar content of the blood ran up high, and the organism sought to throw off the excess of sugar in the circulating blood. This it can accomplish by eliminating it through the kidneys or by burning it up. They found that when there was not pronounced glycosuria, the animals developed fever. The "low fever" of the tropics may have a similar origin. This suggested that in infectious diseases the bacterial toxins may first irritate the sympathetic system. This entails hyperglycemia, and the fever follows on the hyperglycemia. They found this sequence marked in malarial patients; first the increase in the sugar content of the blood, and then, not until an hour or two later, the fever of the malarial attack. In one case the sugar content ran up on a day when the attack was not expected, but the fever followed the hyperglycemia. On the other hand when, under quinin, the blood sugar kept within normal range, the expected attack failed to develop. Among the other data cited is that the high sugar content of the blood declines when the persons change from the lowlands to the cooler mountain climate in the islands. Also that the hyperglycemia is evident in persons coming to the tropics even in less than a week after their arrival, an argument in favor of its nervous origin.

Persons inclined to sympathicotony, to diabetes, to renal glycosuria and to tuberculosis should be advised against life in the tropics, at least in the lowlands. On the other hand, a healed apical catarrh, or other tuberculous pulmonary lesions need not deter from residence in the tropics if the constitution is of a pronounced vagotonic type. The possibility of benefit from treatment with calcium to regulate the unstable sympathetic nervous system is also suggested. Neuritis and polyneuritis are common in Java, and the hyperglycemia may predispose thereto. The tubercle bacillus in the tropics thus finds high sugar content in the blood, low calcium content and low cholesterol content—all three are factors which directly favor its proliferation and a rapid course of the disease. Chronic tuberculosis is rare in the Dutch East Indies outside of the mountain districts.

122. **Treatment of Fistula of the Anus.**—Peter filled the rectum with 500 c.c. of a solution of boric acid. Then he injected into the fistula 0.3 c.c. of tincture of iodin. This was repeated three times in five weeks, followed each time with bismuth, opium and fasting. The long rebellious, suppurating fistula began to heal at once, and the cure was soon complete. The preliminary filling of the rectum with

fluid allowed the strong tincture of iodin to act on the fistula lining but diluted it at once as it entered the rectum, so that there was not the slightest irritation of the mucosa.

Hospitalstidende, Copenhagen

Feb. 13, 1918, **61**, No. 7

123 Electric Light Baths in Rhinolaryngology. O. Strandberg.—p. 193.
124 *Swine Plague in Man; Three Cases. L. Thomsen.—p. 203.

124. **Swine Plague in Man.**—Thomsen has encountered three cases of a lesion on the hand, resembling erysipelas, with lymphangitis running up the arm, nausea and fever. The first patient was a veterinarian and the diagnosis of swine plague was followed by injection of 10 c.c. of the antiserum. In less than an hour the malaise had subsided and in four days recovery was complete except for a little stiffness in the arm. The man had been giving the antiserum to a sick hog four days before his own sickness. The farmer's wife who had helped to hold the hog during the injection got some blood on her hand and a small lesion developed. After failure of other measures, injection of 10 c.c. of the antiserum cured the lesion in three days. In another family a hog taken suddenly sick was slaughtered, and the farmer's wife developed the same clinical picture as in the first two cases. It dragged along untreated for two months and then subsided. One meal was made from the pork but all eating it were taken with severe diarrhea and the rest of the carcass was buried.

Norsk Magazin for Lægevidenskaben, Christiania

March, 1918, **79**, No. 3

125 *Goiter in Norwegian Province. S. Kjølstad.—p. 265.
126 *Idiosyncrasy to Mercury. H. Gjessing.—p. 283.
127 *Miostagmin Reaction with Cancer. H. Salvesen.—p. 293.
128 Ileus in Parturient. A. Sunde.—p. 303.
129 Tuberculosis in Children. T. Frølich.—p. 311.
130 *Economic Importance of Cancer. F. G. Gade.—p. 325.

125. **Goiter in Norway.**—Kjølstad relates that goiter is extremely prevalent in the Telemarken district in southern Norway, southwest of Christiania. In one school at Lunde 80 per cent. of the children have goiter. Most of the goiters are of the atoxic type, and they nearly always subsided under iodin. He never noted any symptoms of intolerance in children, but several adults developed symptoms of thyrotoxic action, and one girl of 15 seemed to have had her simple goiter transformed by the iodin into exophthalmic goiter, although the medication had been moderate and the intermissions long. The iodin seems to act on the hyperplasia of the parenchyma; colloidal nodules and cysts are comparatively little affected by it. The patients must be warned that iodin treatment of goiter takes a long time; too vigorous treatment he regards as dangerous. The dosage he prefers with colloidal goiters is 0.10 gm. potassium iodid every other day for two weeks, and then suspension for three weeks and resumption for two weeks, and so on. With merely parenchymatous goiters, he follows the Kocher method of anointing the goiter with an iodin-potassium iodid salve, using from 1 to 3 gm. daily for two weeks at a time, then suspension for three week periods. Salve is better than the tincture, as it spares the skin. No other drugs or other treatment have proved effectual in his experience. Roentgen treatment is liable to injure the still intact portions of the gland. With symptoms of exophthalmic goiter or other signs of excessive functioning of the thyroid, sodium phosphate in a 5 per cent. solution seems to give good results—a tablespoonful four times a day, in milk. The basis for this treatment is the antagonism between iodin and phosphorus in the action of the thyroid gland (A. Kocher). He has often seen the goiter subside under this treatment, especially when the patients gave up work and went to the hospital. When all else fails, surgical measures should be advised before parenchymatous degeneration appears.

126. **Iodiosyncrasy to Mercury.**—Gjessing's patient was a quadripara who exhibited a violent reaction to injection into the nose, to act on the lacrimal sac, of 1 c.c. of a 1 per 10,000 solution of mercuric chlorid containing a little epinephrin. Possibly her recent conception may have increased the susceptibility, but the case teaches that before using mercury it is well to bear in mind the possibility of an idiosyncrasy, particularly in persons known to develop urticaria on slight excuse.

127. **Miostagmin Reaction with Cancer.**—Salvesen has been giving the miostagmin reaction a trial and found it disappointing. All the cancer patients gave a positive response, but so did all but five of seventeen other patients free from malignant disease. Among twenty-four serums tested from patients with different diseases or healthy controls, all but five gave a positive response. It cannot be said to have much differential value, therefore, although O. Wissing has recently been lauding it as a simple and dependable test for revealing cancer, especially cancer of the digestive tract. He uses a Traube stalagmometer with Izar's antigen, a solution of 2 gm. each of linolic acid and ricinolic acid in 100 c.c. of absolute alcohol.

130. **Cancer as an Economic Loss.**—Gade relates that in a recent ten year period, men formed 48.9 per cent. of the total cancer mortality in Norway, while the men represent only 45.6 per cent. of the total population at the age of 35 and over. Cancer therefore seems to be somewhat more prevalent in men than among women in Norway. He calculates the economic loss to the country of the average loss of 1,080.6 men each year from cancer, and the loss from tuberculosis, pointing out that the tuberculosis mortality includes mostly men at their highest working capacity while cancer is more of a biologic phenomenon, associated with old age, as human beings have got to die of something.

Ugeskrift for Læger, Copenhagen

Jan. 31, 1918, **80**, No. 5

131 *Wanderlust in Degenerates. H. Helweg.—p. 161. Concluded in No. 6, p. 201.
132 General Anesthesia for Drawing all the Teeth. H. T. Jensen.—p. 176.
133 Chloroform Internally for Gallstone Colic and Subcutaneously for Sciatica. H. R. Magnus.—p. 178.

131. **Pathologic Wanderlust.**—Helweg says that the morbid impulse to go away, without special motive that others can see for the change, is a common feature of epilepsy, but is not confined to this disease. The French regard this *automatisme ambulatoire* as a manifestation of hysteria. In Danish literature Helweg has found records of only four cases, and nowhere has he been able to find records of this morbid tendency in degenerates other than epileptics and the hysteric. He describes six cases in detail in which degenerates displayed at times this morbid wanderlust although conscious of what they were doing. In five of the cases there was a history of a fall on the head and in a number of cases on record there is casual reference to trauma of the head. One patient was a young woman of a well-to-do family with some inherited mental taint. She seemed normal as a child but met with two accidents injuring the head and not long after the second one began to wander away from home. Later she left home again and again, living at hotels in the town, pawning her belongings and sometimes stealing to get the money. On some of her wanderings she was accompanied by a man, a chance acquaintance, but there did not seem to be any erotic tendencies, and occasionally she had no clear remembrance of the times she was away from home. Placed in an institution for mental disease, nothing abnormal otherwise could be detected in her.

The psychopathic degeneration responsible in Helweg's cases for the wanderlust is about as common in women as in men, but in women it is not fanned into a flame by abuse of alcohol, and it usually manifests itself in them in other ways than in this tendency to vagabondage. Usually some quarrel or other unpleasantness brings the impulse to run away. In one of the cases the man was in military service and repeatedly ran away to visit his wife. The pathologic wanderlust is practically the same thing whether it is result of epilepsy or hysteria or of dementia praecox or psychopathic degeneracy. There is no need to invent special names for it like Donath's "poriomania" and Joffroy's "dromomania."